

HOW BUREAUCRACY MEETS A CRISIS

THREE STUDIES

by

KULDEEP MATHUR
MOHIT BHATTACHARYA
SUDIPTO MUNDLE



INDIAN INSTITUTE OF PUBLIC ADMINISTRATION
NEW DELHI

© Indian Institute of Public Administration
New Delhi

Reprinted from IJPA, Vol. XX, No. 4

Rs. 4.00

FOREWORD

The three articles of Sarvashri Kuldeep Mathur, Mohit Bhattacharya and Sudipto Mundle form part of a larger study covering different aspects of drought in Maharashtra. These were earlier published in the October-December, 1974 issue of IJPA and are now brought out as a separate brochure with a view to enable a wider public to have the benefit of access to these studies. Each study emphasises an aspect of Indian administration that has been often overlooked. Prof. Kuldeep Mathur brings out the trust and cooperation between elected and appointed wings of the Government in a situation of emergency. Availability of financial resources for the programmes also seems to have contributed to a better understanding between the two wings of Government. Dr. Bhattacharya has, on the other hand, brought out the significant facts that without deviance from rules, the programmes could be implemented in an emergency provided the different levels of administration are interacting face to face through personal communication and field visits. He also brings out the point how rules have been expeditiously formulated and communicated with a view to enable speedy execution of programmes according to rules. Shri Mundle's study highlights how emergency relief programmes could be dovetailed into plan-developmental programmes. By using modern methods of analysis, he has tried to show how this could be achieved. Many other points relating to bureaucracy have been brought to light in these studies. It is needless to highlight them in this introduction. One would wish that such examples of achievement and response are brought out with a view to sustain the morale of development administration as well as to contribute towards an understanding of the resilience of Indian administration to the new tasks and demands made upon it under development, bureaucracy, socialism, etc. It is hoped that this monograph would reach a wider public and stimulate further research as well as promote better understanding between the administration and the citizen. I would like to take this opportunity to thank the Indian Council of Social Sciences Research for financing this research.

NEW DELHI
MARCH 1975

V. JAGANNADHAM
Director

INDIAN INSTITUTE OF PUBLIC
ADMINISTRATION

CONFLICT OR COOPERATION : ADMINISTRATORS AND POLITICIANS IN A CRISIS SITUATION

Kuldeep Mathur

VIEWS about the lack of task or goal orientation within the Indian administrative system have varied with politicians and administrators. The political leadership has based itself upon a general approach to explain this kind of lack of orientation. Since the end of the colonial period it has been popularly argued that the administrators carry an imperial legacy and cannot work in the changed political environment. A sharp distinction between law and order and 'development administration' has been drawn and it is constantly reiterated that the source of present kind of bureaucratic disposition is due to the longing of the administrator of today for the administration of yesterday when he reigned supreme. The emphasis is on maladjustment, lack of dedication and authoritarian tendencies. The incompatibility of the 'ICS ethos' with the needs of the present-day government is stressed.¹

A variation of the same approach has been to emphasise the elite background of the administrators. The argument is that they continue to be recruited from a narrow base of privilege within the society and are, therefore, unable to identify themselves with the political and economic aspirations of the people at large. Much is made of, for example, of the rural-urban dichotomy and hesitation to go and serve in the villages is taken as evidence of urban breeding, not compatible with administrative requirements. Essentially the argument is that the administrators come from a background that is not conducive to an attitude and temperament necessary for development activities.²

For the political leadership, a consequence of these approaches is the demand for 'commitment' in the civil service. Commitment has been looked at in various ways,³ but the essential demand is that the administrators must believe in what they are doing. It is argued that neutrality is merely a cloak to hide their inertia and development programmes need full and open support.

¹ J. LaPalambara, *An Overview in Bureaucracy and Political Development*, 1963, Princeton U. Press, Princeton.

² R. J. Braibanti and J. J. Spengler, *Tradition, Values and Socio-Economic Development*, 1961, Duke U. Press, Durham.

³ Kuldeep Mathur, "Committed Bureaucracy for India: Notes Towards Evolving a Model", *Political Science Review*, Vol. X, 1971, p. 1 & 2.

The administrator looks at the problem from an altogether different angle. He blames the political leadership for introducing irrational criteria in the implementation of schemes for rational development and for giving "a twist to administrative matters so as to prevent decisions purely on merits".⁴ For him, what he calls 'political interference' is a constant irritant seeking to demoralize the whole bureaucracy. The role of the politician and his capacity to articulate the socio-economic aspirations of the people at large is challenged and much is made of the rationality and impartiality of the administrator himself.⁵

These two divergent opinions of the administrators and the politicians emphasise the strong stresses and strains in their relationships and apparently predict mutual hostility in any programme of activity which compels them to work together. But within the Indian situation, this is not always true. In spite of the predispositions of the politicians and administrators certain programmes have succeeded and the immediate tasks on hand implemented well. In such successful cases, it is necessary to find out how this task implementation took place. Was it despite this hostile relationship? Did a new cooperative relationship emerge? If it did, what were the conditions that led to its emergence?

These are some of the questions that we seek to answer in this paper. Probably, successful cases can help delineate processes and practices that can be adopted widely and can narrow down mutual differences of two important groups involved in programmes of plan implementation. No doubt 'successful implementation' will be disputed because it is largely a judgemental concept. Therefore, 'successful implementation' in this study will be strictly confined to the policy frame already laid down.

Data have been collected as part of our study on the administration in Maharashtra during emergency resulting from drought in large parts of the State from 1970-71 to early 1973.⁶ The scarcity works provided employment to above 50 lakhs of people during the peak period of scarcity. The state government with the assistance of the central government spent about Rs. 41.95 crores in the year 1971-72, Rs. 75.72 crores in 1972-73 and Rs. 130.68 crores during the last financial year (from April 1, 1973 to October 15, 1973) on relief alone.

The Government of Maharashtra from the very early period of scarcity came out with an important resolution. It decided that the major purpose

⁴ A.D. Gorwala, *Of Matters Administrative*, 1958, Popular Prakashan, Bombay.

⁵ Kuldeep Mathur, *Bureaucratic Response to Development*, 1972, National Publishing House, Delhi; Kuldeep Mathur, *Sources of Indian Bureaucratic Behaviour*, 1972, Occasional Papers, HCM State Institute of Public Administration, Jaipur.

⁶ Kuldeep Mathur and M. Bhattacharya, *Administrative Response to an Emergency: A Study of Scarcity Administration in Maharashtra*, IIPA, New Delhi (forthcoming).

of scarcity works would be to provide employment to all those who were able-bodied and demanded employment. Gratuitous relief would be restricted to the pregnant women, the old and infirm. Children were restricted from work and were encouraged to continue their formal schooling; though, during peak periods of scarcity they were found to be helping their families to earn more. A second part of this resolution was to provide jobs within an area of five kilometres from their villages. Finally, the priority of works was to be decided on the basis of their productivity. Traditional relief works like metal breaking or road works were to be kept to the minimum.

The administrative system of Maharashtra has to be looked at broadly within this policy frame as far as achievement of objectives is concerned. It has been widely held that it proved equal to the task and, by and large, it fulfilled the aims of the government. The critics have accepted the successful role of the administration even when they dispute the goals and strategies adopted by the government.

The major structural changes required in administration were to provide coordination and cut red-tape in order to take quick decisions and to get quick feedback. At each level, then, coordination committees were established. At both the District as well as Taluka levels, the coordination and advisory committees incorporated political leadership of that area. All members of Parliament, all members of Legislative Assembly, all members of Legislative Council of that district were associated with the District and Taluka Relief Committees. (*Vide* Government Circular R. & F.D., No. SCY-1366-J 11/2/66). The President of the Zilla Parishad and all chairmen of the subject committees of Zilla Parishad were also made members of the District Committee. At the Taluka level, the Sabhapati of the Panchayat Samiti was included. By another order (GC. R & FD No. NI. 7-1-1971), all political parties operating in the area were also to be represented in these committees. The purpose of this wide representation was 'to ensure their cooperation with Government machinery in implementing the various scarcity relief measures undertaken by the Government as well as organizing such relief from the public'.

Thus, the role of the politician was envisaged to help the government and elicit cooperation from the people for the government sponsored programmes. In course of our interviews, we found that the administrators, by and large, believed that the non-officials generally cooperated well with them in implementing scarcity programmes. Politicians were credited with the help they gave in persuading people to give up land for various scarcity works. The administrators also, by and large, thought that their services had been recognized by the political leadership. A few engineers, however, mentioned that greater recognition went to the generalists rather than to the technical staff who actually implemented the works programmes.

More specifically, the Panchayati Raj system was perceived as a very useful instrument in helping them achieve their targets. An administrator pointed out:

"The scarcity conditions were so acute that nearly everybody was involved. To have mass contact or to have contact at the lowest level was important. For this the Panchayati Raj system is essential. During scarcity, the need for Panchayati Raj was assured and it proved itself useful beyond doubt."

In looking at the turbulence that scarcity caused within the society, another administrator said:

"The volume of scarcity was so high and so widespread that successful implementation of the schemes would not have been possible in the absence of the involvement of Panchayati Raj. The scarcity tensions among people were sometimes so high that official agencies who are not accustomed to these types of tensions would have failed in the absence of leadership working in Panchayati Raj."

Political involvement was also seen from the psychological point of view. An administrator emphasized:

"In case non-officials are not involved, they naturally feel left out particularly where massive operations are carried out. Then, they are psychologically obstructive in implementing programmes."

Thus, the Panchayati Raj was seen by the administrators as a useful way: (a) to reach the lowest level down to the villages; (b) to manage conflicts and tensions arising due to scarcity; and (c) to reduce the nuisance value of politicians. In general, they were appreciative of the essential political roles of persuasion, representation and support.

Such perceptions are quite in contrast to those expressed by administrators of another State during 'normal times'. In a study in Rajasthan⁷, the administrators expressed dissatisfaction with the Panchayati Raj system because it interfered with effective implementation of development policies. What they demanded was centralization of powers and abolition of decentralization of democratic institutions. One of them suggested:

"Panchayat Samiti and Zilla Parishad should be abolished. Government agencies should perform the development work right from the district to the village level"

⁷ Kuldeep Mathur, *Sources of Indian Bureaucratic Behaviour*, op. cit.

Senior civil servants of the country have also argued elsewhere that:

"If the implementation has not been as fruitful or successful as has been hoped, any impartial examination would show that the responsibility is not on the civil service but on the so-called local politicians"⁸

The Maharashtra administrators, however, were not sure whether this phenomenon of cooperation would last through normal times. One of the District officials thought that Panchayat Raj system may not work in such a homogeneous way once the emergency is over. Another reasoned that:

"There are too many vested interests which may not allow harmonious relationships during normal times."

The basic argument of the administrators seemed to be that cooperative behaviour has been promoted by a single factor—emergency—and 'once this is removed, routine machinery will take over'. It was emergency that promoted newer methods of work that helped in sustaining an altogether different psychological frame. We shall examine some of these methods below.

There was consistent effort on the part of the administration to associate non-officials in their endeavours. Towards the beginning of 1973, several irregularities and malpractices were observed in the execution of scarcity relief works. A decision was taken to form vigilance committees at the sub-divisional level to detect the malpractices (GR, R & F.D. No. SCY-1373/8867-J-3 dated 27-3-1973). The members of the committee included a non-official apart from the Sub-Divisional Officer and the Deputy Superintendent of Police.

Apart from this, the Secretariat issued specific instructions to the Collectors saying that the programme of relief works which the Collectors of the districts affected by scarcity have been directed to formulate, should be drawn up in consultation with the members of the District Scarcity Relief Committee (GR, R & F.D. No. SWD—1371/J 4.9.1973). This meant that Collectors were specifically asked not to overlook the role of the committee which consisted of a large number of non-officials. This type of insistence was followed up by the Collectors themselves in dealing with programmes drawn up at the Taluka level. In one instance in a district the Tahsildar wrote to the Collector for according sanction to 99 community wells. He wrote that the proposals were submitted in consultation with the BDO. "The formal inquiry for the proposed sites has been made through the 'Talatis' and the 'Gram Panchayat' and the collection of information for actual starting of the wells is taken up in hand." The Collector through a circular insisted that the proposals should be approved by the Taluka Relief Committee (TRC) before the starting of actual work. Accordingly the Tahsildar sent up the proposals only after they had been formally approved by the TRC.

⁸ H. M. Patel, "The Scapegoats", *Seminar*, Aug., 1973.

Clearly, the committees formed at the District and the Taluka level were seen as useful mechanisms to gain public support. They were not brushed aside and were actually used for programme formulation. They were consciously used as a mechanism for solving local disputes and coordinating work in the area.

Individual proposals for starting scarcity works were also received by the officials concerned. An MLA, for example, brought a proposal for starting a community well at a particular site. The Collector immediately instructed processing of the proposal and asked the Tahsildar to report to him within a week's time. Similarly, around May 19, 1973, orders to begin closing down metal breaking centres were issued. The President of a Zilla Parishad requested on May 23, 1973 not to close down certain centres unless alternative employment was assured. Within two days, on May 25, 1973, the Collector noted that the Executive Engineer, Buildings and Communication should not close down these centres unless alternate work was provided to these labourers and a report from the Tahsildar called for alternative work. Such behaviour is repeated in case of similar requests from Sarpanch and people's representation through him.

Easy accessibility to the administrative decision-making was encouraged by the frequent visits of the Chief Minister to the scarcity affected districts. The Chief Minister travelled to each district accompanied by several secretary level officials and local MLAs and MPs. Usually, the day was spent in visiting the scarcity works and meeting and listening to people. On return to the district headquarters after the trip was over, new decisions were taken or existing ones altered. Presumably, discussions were open and based on a situation that both the officials and non-officials had assessed together. Most importantly, visits of this type provided tremendous support and encouragement to the local administration. This approval tended to filter down and the local political leadership as well as the administration were conscious of the gestures of the Chief Minister encouraging administrative leadership.

This open communication led to two important consequences. One of them was that the decisions were quick and were made on the spot. One of the Collectors mentioned to us that sometimes he did not wait for the written order to come. He accepted what he was told verbally and received a *post facto* sanction. The relationship was marked by mutual confidence.

Secondly, this system of working with the Chief Minister also gave a sense of participation to the Collectors in managing the crisis. The decisions did not seem to be unilaterally taken and, therefore, the responsibility of their implementation devolved on both the parties.

The state political leadership tended to give clear directions and goals for the administrators. Targets were fixed and responsibility assigned. It

is worth while to quote from a letter (18/12/1973) of a Collector to his Tahsildars:

"The Chief Minister desires that this programme (of community wells) should be taken up on a massive scale as it will help in meeting the drinking water difficulty and also in providing employment in the village. I am to send a fortnightly report to him about the progress and it will be my unpleasant task to report the names of those Talukas where progress is not satisfactory. I would, therefore, request you to concentrate on this work and see that your proposals are received in any case by 25th instant in the prescribed proforma and the work commenced by 28th instant. I will arrange to sanction the proposals immediately."

Finally, during this scarcity period, there was a general plenty—in terms of financial resources. The Collectors had much greater facility of accommodating political demands than hitherto. The Government was insistent that the relief programme must not suffer due to paucity of funds. In a letter to the Collectors (D.O. R & F.D. No. SCY-1 372/78440-J dated August 3, 1972) it said:

"... you are aware that Government has been quite liberal in sanctioning allotments of funds under '64 Famine Relief' to the Collectors for starting and continuing scarcity works. It has time and again been made clear to the Collectors that in no case they should lag behind in starting scarcity relief works where necessary. Government will be providing adequate funds to enable the Collectors to arrange for the implementation of scarcity Relief Programme. Today the Government has sanctioned additional allotments to the Collectors in your division as mentioned in the appended statement I would like you to impress on the Collectors that looking to the gravity of the situation and the need for giving relief to the scarcity affected people, they should not hesitate in starting relief works and that there should be no complaint that works are not being started by the Collectors for want of funds. ..."

The policy enunciated by the Government was clear. Scarcity works had to be started to give employment to the affected. Wherever, the people were unemployed, the need for starting scarcity works was obvious. Thus, the political demands were in the nature of bringing to the notice of the Collectors where such a need existed. The examples cited above, regarding the restarting of metal breaking centres demonstrate the acceptance by the officials of such types of demands. Other demands related to location and kind of work to be started. Location did not present such a problem because it was easy to establish more than one scarcity work if the situation

warranted. Naturally, a work could not be started if the labour was not available. Thus, the parameters of the situation seemed to be clear to both administrators as well as the politicians.

However, conflicts arose in pursuit of policies that were meant to give benefits to the backward classes. There was a case of a hunger strike by a group of persons against the delay in starting a percolation tank. These people knew that the tank would submerge the lands of the backward classes. This resulted in pressures and counter-pressures and finally the rains came to the rescue of the administration when funds for scarcity works were withdrawn.

Significantly, facility of accommodating political demands was based on easy availability of funds. Probably, this single characteristic takes away much of the sting from the relationship between the administrator and the politician. Competition for scarce resources is the major phenomenon of our political system. Politicians are attracted in maximising gains from the distribution machinery because their influence and stay in power depends upon that. The conflict situation arises with the central planning system giving the responsibility for resource distribution to the state machinery and politicians depending on the mercies of this machinery for their own survival. Such a situation did not exist in Maharashtra during scarcity for the administrative machinery was ready to satisfy political demands, thus eliminating competition. Cooperative behaviour was the result.

Easy accommodation also led to psychological satisfaction to both the groups. The administrators were satisfied that they could give and the politicians were satisfied because they could get what they demanded. Administrators had to spend money to begin scarcity works and provide employment and they did not want to leave any room for complaint. Complaints would come from politicians; hence their importance in affecting administrative effectiveness. On the other hand, the politicians realized that scarcity works and ensuing employment provided them with political support necessary for staying in power and these could not be successfully accomplished unless they gained support from the administrative machinery. Probably, it was in reference to such a situation that we heard remarks said half in jest and half in seriousness: "Our boys could win elections at that time" or "we helped the ruling party to win elections in 1972".

This recognition of mutual need brings us to our final observation. It seems to us that the bureaucracy was no more a faceless, anonymous bureaucracy in Maharashtra during the emergency. The civil servants were playing significant political roles. They were going out to the people, responding to popular pressures and publicly defending the work that they had undertaken.

The district officials were meeting leaders of the opposition and, in one case, as a Collector mentioned, he offered to tour the whole district with a critical leader to test out the veracity of his allegations. There seemed to be a merging of roles which was legitimized by the recognition granted to it by both the groups.

There is also a significant feature of the political context in which these relationships converged on cooperative behaviour. The ruling party had a complete majority in all the elected institutions. The delegation of Members of Parliament was dominantly Congress with about 93.3 per cent representation. In the state assembly, the Congress had a majority of 82 per cent of seats. In the Zilla Parishads average majority was around 69 per cent. Probably, this helped the Chief Minister in presenting an integrated and unified political direction to the administrators.

Let us emphasize here that one should not get away with the impression that the picture of political administrative relationship was that of perfect harmony in Maharashtra during the emergency. There were disharmonies but the general picture was marked by the above dominant features.

In summarizing our findings, we find that the non-official leadership duly acknowledged the role of the administrators and they in turn accepted the politician in implementing the scarcity works programme. The administrators particularly emphasized the role of politicians in resolving disputes that related to land acquisition for scarcity works and their site selection. Overall there was a more positive reaction to each other.

Several explanatory hypotheses were cited for this kind of phenomenon. For one thing, there was more frequent and open communication between the political leadership and the administrators. The Chief Minister himself often travelled through the district carrying a bevy of officials from the secretariat and joined by the Divisional Commissioner, District Collector and other officials of the District. Time was spent in inspecting scarcity works and listening to people. Then the evening was spent with officials describing their difficulties. Decisions were immediately taken and orders were issued, then and there. An atmosphere of urgency was created and everybody was psychologically satisfied with a sense of participation in the decision-making process. This open communication also constantly focussed attention on tasks at hand and provided clear direction for their achievement. Satisfactory progress in task achievement was recognized. This had a new kind of psychological environment.

The administrators did not work in the atmosphere of scarcity of resources. The purpose of the programme was to give employment to

whosoever demanded it. The situation was that of the politicians demanding and the administrators satisfying. This further reinforced the new kind of psychological environment. Both felt the need of the other. While the politicians helped in easing tensions and resolving disputes, the administrators implemented policies. It was not as if perfect harmony reigned, but disharmony was rather an exception than the rule.

Evidently, the situational context changed considerably to alter the character of mutual interaction. There was open communication, frequent face to face contact, specific goals with clear direction and the need felt by both of each other in attaining these goals. These features are also some of the preconditions of cooperative behaviour as summarised by Deutsch.⁹ In a similar context, Sherif¹⁰ has formulated the concept of superordinate goals on the basis of his experiments on intergroup conflict and cooperation. This concept emerges from an assumption about inter-group conflicts; if conflict develops from mutually incompatible goals, common goals should bring about cooperation. Common goals should be such that have compelling appeal for members of each group but that neither can achieve without participation and help from the other.

Apparently, the scarcity situation in Maharashtra provided conditions for cooperative behaviour as well as compelling reasons to the politicians and the administrators of working together. Superordinate goals were easily perceived and formulated. Mutual need was quickly recognized and a congenial working relationship developed. Probably, this happened in spite of hostile images and counter images and therefore underlies the significance of the characteristics of situations in promoting conflict and cooperation between groups.

We feel that the data strongly suggest that the way we have attempted to explain the relationship between administrators and politicians is more fruitful than the approaches basing themselves on historical legacy or social background dichotomy.¹¹ For individual roles are determined by the structural constraints and demands of the situation. Roles are not played in a vacuum where mutual perceptions are stable for all time to come. Technology of work and demands of environment on the organization shape the patterns of individual roles.¹² The new nature of organizational goals and the demands made by the scarcity situation on the state changed its character

⁹ M. Deutsch, *Conflict and its Resolution in Conflict Resolution: Contributions of the Behavioural Sciences*, 1971, U. of Notre Dame Press, Notre Dame, 1966.

¹⁰ M. Sherif, *Group Conflicts and Cooperation: Their Social Psychology*, Routledge and Kegan Paul, London.

¹¹ Braibanti and Spengler, *op. cit.*

¹² E. J. Miller and A.K. Rice, *Systems of Organisation: The Control Task and Sentient Boundaries*, 1967, Tavistock, London.

to adapt itself to the new circumstances. Administrators and politicians were the same individuals but their mutual relationships changed considerably with the change in the demands of the task system.

Therefore, it becomes necessary to investigate the relationship between politicians and administrators in the context of a particular programme activity and see whether a general pattern emerges in cases of conflict or cooperation between the two groups.

BUREAUCRATIC RESPONSE TO EMERGENCY: AN EMPIRICAL STUDY*

Mohit Bhattacharya

THIS paper is based on field studies undertaken in two districts of Maharashtra—Poona and Aurangabad—which along with 19 other districts were very badly affected by near famine conditions due to successive failure of rains between 1971 and 1973. Large scale relief operations had to be mounted by the State Government to avert a disaster of the worst kind. The purpose of this study is to explain the nature of the administrative organization that had come into being to meet the challenge of the emergency.

There are not many studies in India focussing on administrative structure and behaviour in emergency. Two studies on the Poona Dam burst in 1961 deserve special mention in this context. Sulabha Brahme and Prakash Gole¹ did a study of the extent of damage caused by the disaster and the relief measures undertaken to alleviate the misery of the afflicted population. It is more a survey of the disaster-stricken population and the subsequent relief measures—both public and private—than a study of public administration in a disaster situation. The other study by Allen Grimshaw² of the same episode is part of a cross-cultural research focussed on the relative success or failure of administrative organizations in meeting disaster situations. With the help of carefully chosen dimensions of bureaucracy, such as accountability, responsibility and autonomy, Grimshaw has attempted to find out administrative response to emergency in three countries, viz., U.S.A., Mexico, and India. His major finding of the Poona study is that, in India, field administration has in normal times accountability and responsibility, but no autonomy. It is absence of autonomy which he suggests was responsible for the collapse of bureaucratic decision-making apparatus in the face of the disaster. In the post-impact period, the success of administrative organization was possible due to the introduction of autonomy through the posting of a high-ranking officer on the spot. This finding has important implications for field administrative organization both in normal times and in emergency.

* I am grateful to Professor Ishwar Dayal for his comments on an earlier draft of this paper. Very helpful exchange of ideas with Professor Kuldeep Mathur, the co-author of the main study Report on the subject, is also gratefully acknowledged.

¹ S. Brahme and P. Gole, *Deluge in Poona*, Bombay, 1967, Asia Publishing House.

² Allen D. Grimshaw, *The Impact of Natural Disaster on Governmental Bureaucracies in three Cultural Settings* (Read at Annual meeting of the American Sociological Association, Montreal, 1964) Unpublished.

CONCEPTUAL FRAME

Disaster studies undertaken by a number of American scholars have yielded a rich variety of generalizations about organizational response to emergency situation. At the macro level, the concept of 'synthetic organization' has been used by Thompson and Hawkes³ to suggest interorganizational alliances to increase the coping ability in a disaster situation. A disaster can be looked at as a change in the 'task environment' of an organization, precipitating a sudden increase in the discrepancy between organizational demands and organizational capacity.⁴ In a high stress situation as in a large scale disaster, organizational response to the demand overload is expected to manifest itself in important changes in organizational capacity.

This study of crisis administration revolves round the manner in which public administrative apparatuses sought to react to drastic environmental changes. In organizational theory literature, there are quite a few significant studies dealing with the transactional relationship between the organization and the environment. Specific mention may be made in this connection of the writings of Emery and Trist, Rice, Burns and Stalker, and Lawrence and Lorsch.⁵ These studies are useful in conceptualising the environmental context and in relating organizational response to changed environmental conditions.

The bureaucratic model, however, is the main reference point of the present study and the substantive concern has been to conduct the study along some of the important dimensions of the bureaucratic structure. According to the Weberian formulation, a bureaucratic organization exhibits certain characteristics such as fixity of position, division of labour, hierarchy, and the rule of rules. Each position in the organization and the duties and responsibilities attached to it are clearly and formally specified. Work is systematically divided in the organization. There is a regular arrangement of positions in a hierarchy with each official responsible for his subordinate's actions and in turn responsible to his superior. The structure and operations of the organization are governed by methodically prescribed rules.

In this way, the Weberian model lays down conditions for a reliable, stable, rational and predictable bureaucratic machinery. We are not going to

³ J. D. Thompson and R.W. Hawkes, "Disaster, Community Organisation and Administrative Process", *Man and Society in Disaster*, ed. by George W. Baker and D. Chapman, New York, 1962, Basic Books.

⁴ J. Eugene Haas and T.E. Drabek, *Complex Organisations*, New York, 1973, MacMillan.

⁵ F.E. Emery and E.L. Trist, "The Causal Texture of Organizational Environments, (1965), *Human Relations*, 18:21-32; A. K. Rice, *The Enterprise and its Environment*, London, 1967", Tavistock Publications; Tom Burns and G.M. Stalker, *The Management of Innovation*, London, 1961, Tavistock Publications; Paul R. Lawrence and J.W. Lorsch, *Organisation and Environment*, Homewood, 1969, Ill.; Richard D. Irwin.

discuss all the criticisms against the model which would require a full volume to put in all that has taken place after Weber.⁶ What seems important for our study is the enquiry: What kind of bureaucratic organization comes into being during an emergency, when there is tremendous environmental pressure on a public bureaucracy? What happens then to the structural elements of the bureaucracy as mentioned above? If significant divergences come to light in an emergency situation, bureaucratic theory may have to be considered as specific situation-bound and not one that has universal applicability irrespective of changes in environmental contexts.

HYPOTHESES

Leaning against these conceptualizations relating to organization-environment transaction and the bureaucratic organization, this study has been guided by the following key hypotheses:

- ✓ (i) There will be a convergence of organizations to increase the ability to cope with the emergency;
- ✓ (ii) The organizational capacity will be enhanced to suit the requirements of the crisis situation (This is closely related to the first proposition); and
- ✓ (iii) The bureaucratic organization will exhibit changes in such dimensions as work organization, authority and hierarchy, and rules application in order to introduce flexibility in overall operation. With the loosening of the hierarchy, it is anticipated that decision-making will not be at fixed points, and control and communication will be directed more toward functional success than mere authority expression.

These hypotheses relate broadly to both macro and micro structure of relief organization. The phenomenon of organizational convergence and the need for altering the organizational performance structure to enhance the coping ability of involved organizations refer to organizational accretions in response to emergency. Both are focussed on the broader framework of relief organization which would go to determine the availability of organizational resources to meet the emergency situation. The internal dynamics of the bureaucratic organization are sought to be studied by locating changes in specific structural components and identifying consequential operational shifts as manifested in decision-making, control and communication, and delegation. It is hypothesised that the bureaucratic organization at all levels will undergo dimensional changes to facilitate flexible operations in a crisis situation fraught with all kinds of uncertainties.

⁶ See in this connection Nicos P. Mouzelis, *Organization and Bureaucracy*, Aldine Publishing Co., Chicago, 1967.

METHOD

Within this frame, relevant data for the study were collected through: (a) interviews, (b) field visits, (c) questionnaire on officials' response, and (d) secondary sources such as official reports and returns and government orders. At different levels—secretariat, division, district and sub-district—various officers dealing with scarcity relief operations were interviewed. Field visits were made to two acutely affected districts, *viz.*, Poona and Aurangabad to gather first-hand knowledge of the situation. The questionnaire was administered to a cross section of officers at different levels who had actually been engaged in the operations. The purpose was to understand their perception of the working of the relief organization, as compared to normal administration. There are excellent secondary sources of data in the form of government reports and orders, as the Government of Maharashtra had been carefully watching the developing situation and all the time trying meticulously to codify the orders, rules and regulations.

STRUCTURE OF ADMINISTRATION DURING NORMAL TIMES

Since the main thrust of the study is toward the understanding of organizational change during emergency, a brief look at the normal-time structure of administration at different levels will be helpful in appreciating the extent of change. The Secretariat consists of a number of departments most of which are charged with line functions and some like the Finance Department and the General Administration Department have to do staff functions. For our purposes, notable line departments are Revenue and Forests Department, Buildings and Communications Department, Irrigation and Power Department, Agricultural and Cooperation Department, Rural Development Department, Industries and Labour Department, Urban Development, Public Health and Housing Department, and Food and Civil Supplies Department.⁷ The line departments can be said to be normally inward-looking. This is proved by the fact that the last Administrative Reorganisation Committee⁸ found as many as twenty inter-departmental committees set up to coordinate the activities of thirteen departments. Besides, there is the Secretaries' Committee to sort out interdepartmental matters. In this connection, the role of the Chief Secretary in achieving coordination deserves special mention. As the Administrative Reorganisation Committee observed, "the Chief Secretary is generally a part of any committee or group of officers concerned with high level policy particularly

⁷ For a more detailed account of the Secretariat organization, see *Organization of the Government of Maharashtra*, Indian Institute of Public Administration, Maharashtra Regional Branch, 1966.

⁸ Government of Maharashtra, *Report of the Administrative Reorganisation Committee*, Bombay, 1968, Government of Maharashtra.

during crisis. In fact, it is probably crisis administration that really utilises the role of the Chief Secretary as a coordinator”.

For the purposes of revenue and general administration, there is a hierarchy of spatial units consisting of the Division, District, Sub-division, Taluka, circle and the village. At the village level, the talati is the base line functionary of government. At successive levels, the circle officer, the tahsildar, the sub-divisional officer, the collector and the divisional commissioner look after their respective jurisdictions.

In the district, the collector along with the hierarchy of revenue officials constitutes the focal authority. There is some sort of a loose relationship between the collector and the district heads of departments. It is perhaps tradition rather than any secure legal foundation that supports the image of the collector as the eyes and ears of the government, and to the extent the Secretariat treats the office of the collector as the point through which information about field administration should pass to the State headquarters and *vice versa*, it tends to lend support to the coordinating role of the collector. Normally, however, there is evidence to suggest that the territorial units of functional departments such as the Buildings and Communications Department and the Irrigation and Power Department are upward looking rather than lateral-looking. They are vertically connected through the field hierarchy with the respective Secretariat departments. They may occasionally get in touch with the collector for specific purposes, but formally speaking, they are not subordinate to the collector. To give an instance, the Buildings and Communications Department has its territorial units in three hierarchical levels. The *circle*, at the top, is headed by a superintending engineer who is responsible to the Chief Engineer at State headquarters for administrative and general professional control of public works entrusted to officers of the Department within his circle. The middle tier is the *Division* which is generally coterminous with the jurisdiction of the collector's district. It is the executive unit of the Department and headed by an Executive Engineer responsible to the Superintending Engineer at the circle level. The lowest unit is the *Sub-Division* looked after by a sub-divisional engineer who, in turn, is responsible to the executive engineer at the divisional level. So, the chain of command and the normal line of communication and control are vertically moving from the Secretariat department through the circle and the division to the lowest territorial unit, the sub-division. The collector is not ordinarily involved in any way with the structure and operations of this set-up. Of course, he gets in touch with the district heads of departments at the meetings he would be calling periodically. Similarly, the divisional commissioner holds periodic meetings of the regional heads of departments to discuss matters of common interest. He advises the collectors under him, coordinates their activities and exercises general supervision. Between the region and the State headquarters, he serves as the connecting link.

ZILLA PARISHAD AND STATE FIELD ADMINISTRATION

In recent times, the most important institutional development at the field level has been the emergence of the zilla parishads and panchayat samitis under the Maharashtra Zilla Parishads and Panchayat Samitis Act, 1961. The zilla parishad has been clothed with substantial powers covering almost the entire gamut of district development works. In a three-tier structure, the zilla parishad forms the highest and most powerful tier. The chief executive officer of the parishad is of the rank and status of a collector. The middle-tier, panchayat samiti, serves as the executive arm of the parishad. The parishad is a directly elected body and the village panchayats are represented on the middle tier through the sarpanchas elected from their electoral colleges. The members who are elected to the parishad from a particular block area are taken as members of the panchayat samiti. This shows the linkages between different tiers. For the supervision of the activities of the village panchayats, considerable controlling powers have been vested in the samitis and the parishad.

With the formation of the zilla parishads, the entire field administration has been split up into two sectors: the State Sector under the State Government and the Local Sector under the Zilla Parishad in association with the units below it. The State Government has retained considerable controlling and supervisory powers over the activities of the parishad. Even in normal times, the government can authorise an officer to inspect any works and give technical guidance, give directions regarding works and development schemes, and undertake inspections and call for records and returns. The divisional commissioner is the chairman of the Divisional Selection Board for the recruitment of certain categories of technical personnel. The coordination of the State and Local Sector development schemes is achieved through him, and he is responsible for effecting coordination between the regional heads of the different government departments and the zilla parishads. Similarly, the collector is the chairman of the District Selection Board for the recruitment of staff to class III and IV posts. There are two important statutory provisions which are of particular significance for the present study. Under Section 268 of the Act, in cases of emergency, the collector has been authorised to provide the execution of extraordinary work, or the doing of an act, which a zilla parishad or panchayat samiti is empowered to execute or do. The collector has, of course, to report his action to the divisional commissioner who may either modify or confirm it. The other provision relates to the duties of the zilla parishad during famine, scarcity, floods or any other natural calamities. Under Section 107 of the Act, "where the State government during any year has declared any area as famine stricken and or an area of acute scarcity, and has granted suspension or remission of land revenue . . . or where distress is caused by floods or other natural calamities in any area, it

shall be the duty of the Zilla Parishad having jurisdiction over the area, if so directed by the State Government, to undertake relief operations in such area either by the grant of gratuitous relief in the form of doles of money or through expenditure on such public works or such preventive or remedial measures as may be specified by the State Government in the direction."

The effect of all these provisions is that although the zilla parishad has been constituted as an autonomous organization, the law provides for considerable flexibility so that the zilla parishad machinery can, in emergency, be made to keep in step with state directives and guidance.

In normal times, the field units of the functional departments of government such as the Buildings and Communications Department and the Irrigation and Power Department work in close association with the zilla parishad. For instance, the Government has laid down certain conditions which the zilla parishads are required to follow in the execution of road development schemes. It is the responsibility of the State Buildings and Communications Department to assist the parishads in maintaining the technical standards. The Superintending Engineers at the circle level give technical guidance and assistance to the engineering departments of the parishad. The survey and preparation of road development schemes of the parishads are undertaken by the Road Project Divisions of the Buildings and Communications Department. Technical guidance is also given by these Divisions for the projects prepared by the parishad engineering departments for execution from the parishad's own resources. Similarly, contacts exist in normal times between the field units of the Irrigation and Power Department and the Irrigation Wing of the parishad.

STRUCTURE OF RELIEF ORGANIZATION

What kind of bureaucratic organization should take over the tasks of relief administration and how the entire operation has to be planned and executed—all this has been very carefully codified in the Bombay Scarcity Manual which was drafted in 1954 in replacement of the old Famine Code of 1885. Broadly speaking, the organization that was mounted during the last scarcity relief works followed the model of the Manual. For detailed analysis, the structure of relief organization that had come into being during the recent scarcity relief work can be described in terms of levels of administration. At the *level of the Headquarters Organization* of the Government, there came up the Cabinet Sub-Committee on Scarcity consisting of the Chief Minister and the Ministers in charge of Finance, Revenue, Agriculture, Irrigation, and Buildings and Communications. The Secretariat organization was given a unity through the Secretaries' Committee presided over by the Chief Secretary. The Secretary, Revenue and Forests Department, was Secretary to this

Committee. The Revenue Secretary became the vital link between the field and the Secretariat in all matters relating to scarcity relief administration and kept the government informed about the operations at the ground level. The Revenue and Forests Department became the focal department at the Secretariat level in keeping an overall view of scarcity administration. Depending on the tasks to be performed at the field level such as construction works of all kinds, irrigation works and soil conservation, the functional departments most involved in the execution of different schemes were the Buildings and Communications Department, Irrigation and Power Department, Agriculture and Cooperation Department.

At the regional level, the Divisional Commissioner was made responsible for the supervision of the relief programmes within the division. The Commissioners were to report periodically to the government their observations on the method in which the scarcity relief programme was being implemented in their divisions, the difficulties faced by the implementing agencies and the attempts made to remove these difficulties. They were empowered to requisition trucks from government departments within the division and place them wherever necessary, and authorised to purchase tools required for scarcity relief works. For the distribution of *tagai* loan among the farmers, funds were placed at the disposal of the commissioners. They had to hold fortnightly meetings of officers at different levels to bring to the personal notice of the officers important orders issued by the government.

In the case of other functional departments such as the Buildings and Communications Department, the unity of command and departmental hierarchy were significantly affected by placing the Executive Engineers and Sub-Divisional Officers directly under the control of the Collector. The Superintending Engineers, who are the controlling officers in normal times, were mainly entrusted with the task of offering general guidance, ensuring supply of tools, preservation of tools and records, and seeing that departmental instructions were followed by the officers like the executive engineers, sub-divisional officers and other staff.

At the district level which has been the main theatre of relief operations, the collector occupied the pivotal position. His supremacy was undisputed and he was clothed with all the powers necessary to match his responsibilities. The district level heads of departments were, for all practical purposes, placed under the collector. If there would be any doubt about 'authority relationship', the order from the Secretariat would immediately dispel it⁹. He had to prepare the scarcity relief plan, allocate work among the different

⁹ For instance, a clear government letter was issued explaining the subordination of the Executive Engineer and Sub-Divisional Officers to the Collector/the Chief Executive Officer, Zilla Parishad.

implementing agencies, secure funds, manpower and tools, ensure prompt payments to scarcity labour, supervise and control the entire operation personally and through the revenue hierarchy, remove bottlenecks, supply fodder and foodgrains, and in fact do the whole range of functions mentioned in the Scarcity Manual and some more. The responsibility for the successful conduct of relief operations was his, and to the state government, now represented largely by the Revenue Department, the point of reference at the district level was the Collector.

As the chief administrator of scarcity operations, the Collector had at his disposal all the implementing agencies such as the Buildings and Communications Department, Irrigation and Power Department, Agriculture and Cooperation Department (Soil Conservation), Forests Department and the entire panchayati raj organization headed by the Zilla Parishad. All this was in addition to the normal revenue hierarchy which would always be available with the Collector. Thus, with the integration of the district level establishment of government and the whole panchayati raj set-up, a huge and complex administrative machine was created which the Collector had been called upon to operate.

The normal organizational performance structure had to be changed by making changes in the resources structure. In other words, all kinds of resources — funds, personnel and material — had to be increased to enhance the capacity of the organization to meet the challenge. There was a clear directive to the collectors that works should not suffer due to lack of funds. To quote a communication to the collectors:

“I would like to impress on the collectors that looking to the gravity of the situation and the need for giving relief to the scarcity affected people, they should not hesitate in starting relief works and that there should be no complaints that works are not being started by the collectors for want of funds.”

(Secretary's D.O.R. & F.D., No. SCY-1372/78440-J, dated August 3, 1972 to all collectors.)

Similarly, need for more staff was met in a number of ways. Firstly, the collectors were asked to deploy their own staff on scarcity works. Secondly, certain sub-divisions of the technical departments like the Buildings and Communications Department and the Irrigation and Power Department were transferred to the collectors for engagement in scarcity operations. Thirdly, in consultation with the heads of departments, the collectors were empowered to requisition staff from other departments such as overseers, block development officers, extension officers, muster clerks and so on. Fourthly, the collectors were authorised to recruit, in consultation with the implementing

agencies, retired technical personnel like executive engineers, deputy engineers, overseers and mistries for one year. Also, they were empowered to create temporary posts belonging to class III and class IV. Fifthly, technically qualified people volunteered, in some instances, to offer their services in honorary capacity. Lastly, delegation of powers to lower functionaries had the effect of augmenting manpower.

Steps were taken to increase the supply of much-needed materials such as tools and equipments, trucks and jeeps and other vehicles, fodder, food-grains, water and medicines. The supply of items like tools and fodder were enhanced by outright purchase, and by the manipulation of existing resources available with other departments and organizations. For instance, the Buildings and Communications Department issued instructions to all the Superintending Engineers to spare one or two road rollers to the Zilla Parishads on demand. For trucks, jeeps and other vehicles, the Collectors were authorised to requisition these from other government departments and even from private individuals, factories and cooperatives. Help from the Army authorities, private industry, municipal organizations, and voluntary and philanthropic institutions took a great deal of strain off the government agencies. A large number of non-official organizations rendered valuable help to the district authorities.

Another important phenomenon is the constitution of a number of committees for different purposes. At the state level, apart from the Secretaries' Committee, there were coordination meetings where the Chief Minister would be consulting the members of the Legislature. Also, the Revenue Secretary had his quota of coordination meetings where the executing agencies would be present. The District Relief Committee, with the Collector as Chairman consisted of all the district heads of departments, the chairman, the chairman of subject committees and the chief executive officer of the Zilla Parishad, all the MPs, MLAs and MLCs of the district and all the political parties in the district. At the taluka level, the Taluka Relief Committee had on it all the non-officials and officials belonging to that level. The Sub-Divisional Officer was the chairman of this committee. These committees were mainly to advise the government organization on relief matters, stimulate private charity and generally supervise works and the distribution of gratuitous relief.

A committee with the Collector as chairman and district heads of departments executing different schemes was constituted to facilitate inter-agency coordination and consultation.

A chain of committees was brought into being under a newly created Directorate of Medical Relief at different levels, viz., State and districts.

to organize and coordinate the various measures of medical relief undertaken by governmental or private agencies.¹⁰ To keep watch on relief operations and to detect defects and corrupt practices on the works, a vigilance committee was constituted in each sub-division. The Sub-Divisional Officer was its chairman, and the other two members were the Deputy Superintendent of Police and one nominated non-official. One important function of this committee has been to keep a close watch on the working of fair price shops.¹¹

Within the framework of enlarged district administration, the Zilla Parishad and its constituent units were intimately involved in scarcity relief operations. All kinds of works including road works, metal breaking centres, irrigation tanks, percolation tanks, desilting of tanks, village ponds and community wells were undertaken by the Zilla Parishad in association with the lower tiers. The larger programmes were looked after by the construction and irrigation wings of the Parishad. The Block Development Officer (BDO) along with the extension officers conducted general supervision of the works. The BDO was appointed as the drawing and disbursing officer for making payments to scarcity labour. Even the tiny village panchayats had their share of responsibilities such as upkeep of tools, feeding the sick and the old, drinking water supply and construction of community wells.

RELIEF ORGANIZATION AT WORK

This is an account of the 'performance structure' of the organization for scarcity relief operations. An attempt has been made in Fig. 1 to draw a picture of this organization. It shows an adaptive role-relationship pattern which forms a new 'normative structure' during scarcity relief administration. The subordination of the implementing agencies to the collector, the subservience of an autonomous elected body like the zilla parishad to him, even the way the collector was called upon to coordinate the complex relief machinery—all these marked a distinct role-reversal for everyone whose normal role was different from what he was being asked to do in emergency. The memory and habits of performance pattern in organizations, which in normal times are more independent than interdependent, would in all probability prove dysfunctional and produce strains during participation in a makeshift integrated organization. We would now try to capture, very broadly, what was actually going on inside the machine.

More pointedly, we would be interested to know: what happened to bureaucratic hierarchy and rules; how did the different levels of administration communicate between themselves; what were the control mechanisms

¹⁰ G.R., U.D., P.H.L. H.D., No. SMR-1073/76316-(B)/V dated February 3, 1973.

¹¹ G.R., R & F.D., No. SCY-1373/8867-J-3 dated April 27, 1973, and G.C., F. & C.D., No. FPS-1073/15703-N dated May 19, 1973.

evolved to ensure unimpeded operations; how were decisions being taken at different levels; and what was the extent of delegation of powers in the organization. The findings are expected to identify the flexibility-producing factors in a crisis situation.

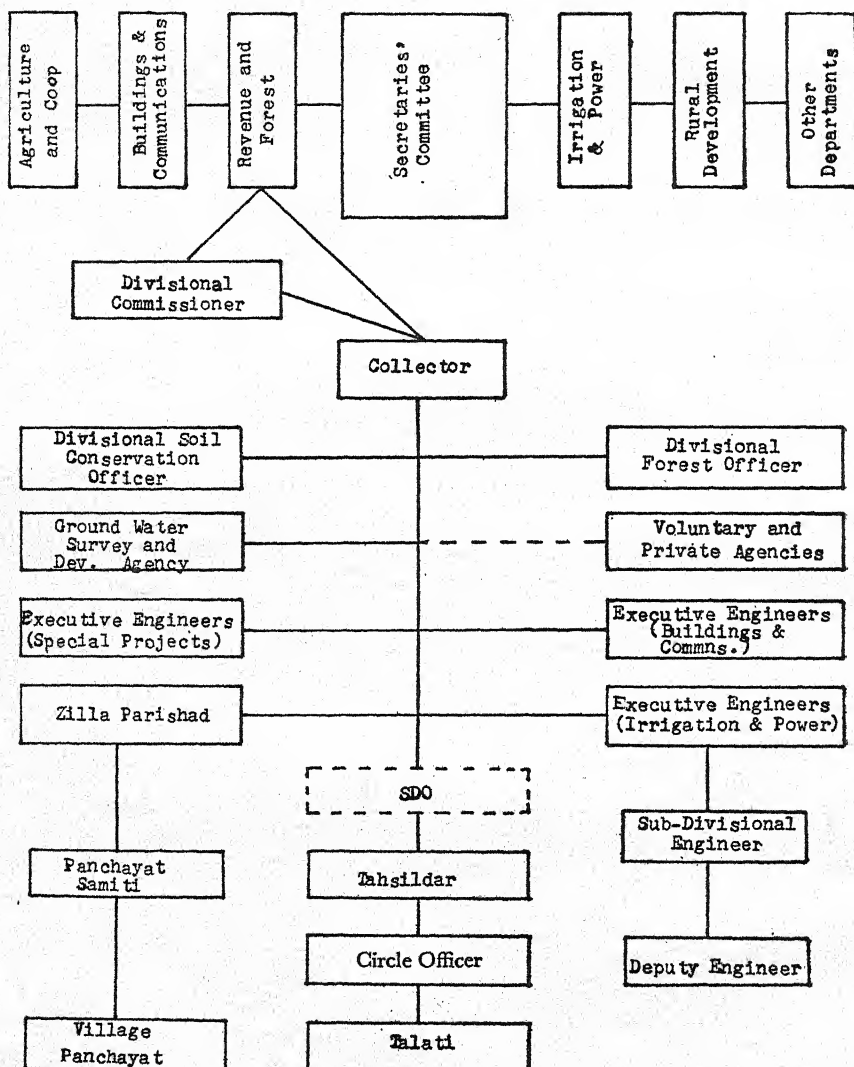


FIG 1 STRUCTURE OF RELIEF ADMINISTRATION
(Legend - - - indicates discontinuous, not regular, linkage)

DECISION-MAKING

The emergency administration during scarcity had evolved three distinct layers of decision-making: the Secretariat including the Cabinet, the Collectorate, and the taluka/village. This is shown graphically in Fig. 2. Enormous quantity of field data were reaching the Secretariat from all directions through the Commissioner, Collector, field visits of Ministers and Secretariat officials. This provided a strong data base for top decision-making. Only thing that was necessary was to mount a mechanism to process the data and produce decisions. This was facilitated by the leadership role of the Revenue Department which proved to be the main agency feeding the Secretaries' Committee with relevant data. The committee was regularly converting the data into appropriate decisions. In taking decisions, the normal sacrosanctity of departmental boundaries was ignored, and the Secretariat departments were freely crossing the boundaries in the interest of avoidance of delays. Usually, if a department would be transmitting a decision that needed prior consultation with other departments, the decision would be issued with the concurrence of the latter. The Secretaries' Committee under the chairmanship of the Chief Secretary created an environment of harmony, which, coupled with the situational need, encouraged the departments to take decisions through consultation and collaboration. Many a time, decisions on urgent issues would be taken on the spot at the field level, when the Ministers and Secretariat officials would be visiting the districts. This, in effect, led to a kind of physical shifting of the Secretariat to the field.

Down below, the 'scarcity cell' in the Collectorate was the repository of all field data coming in from the different operating agencies. The collectorate was, on the one hand, acting as the distributor of decisions flowing down from the Secretariat; and on the other, it was taking certain decisions itself on what projects should be started in which place and who should undertake what kind of works. The list of projects would come initially from the taluka level where the Sub-Divisional Officer in consultation with the Taluka Relief Committee and the taluka level officials were preparing an inventory of suitable works that could be undertaken at different village centres. The lists of projects obtained from the different talukas would be consolidated at the collectorate level and the collector in consultation with the District Relief Committee would be finalising the projects inventory for the district as a whole. The Collector, with the advice and suggestions of the District Officers' Committee, would then select appropriate projects for actual commissioning. He would be allotting specific works to particular agencies. The inputs for decisions were often flowing in by way of demands expressed by the local village leaders either directly or through local officials such as the tahsildar and the block development officer. Other data gathering devices were the field visits of the Collector, the Sub-Divisional Officer and other

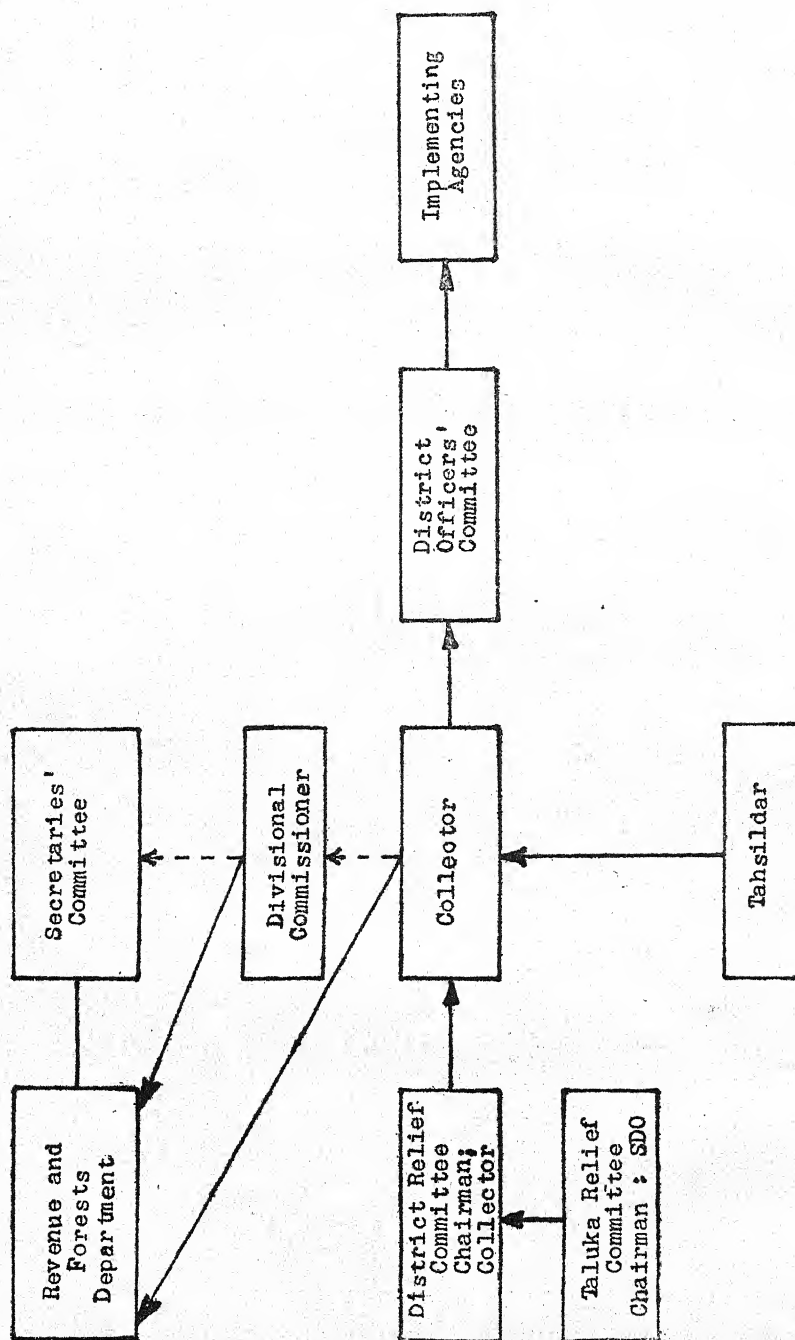


FIG. 2 DECISION MAKING PROCESS

revenue staff, and a regular reporting system between the collectorate, and the implementing agencies and field officials.

Certain types of decisions were allowed to be taken at the lowest level as it was felt that those who were living closest to the field situation had far better knowledge with which to take those kinds of decisions. Also, such a system of decentralised decision-making relieved the collector of his administrative load. A filtration process was thus built-in which enabled the collector to avoid the local pulls and pressures. This can best be illustrated by the decision-making process in selecting sites for community wells. The sites were initially selected by the members of village panchayat, who were then passing on their suggestions to the panchayat samiti. Next the BDO and the Deputy Engineer were to verify the sites as regards their suitability in accordance with the guidelines laid down by the government. The BDO, in consultation with the Deputy Engineer, was authorised to reject a site and suggest an alternative one. This process provided for initiative by the village leaders, reference to a higher-tier authority and final selection on the basis of technical soundness.

COMMUNICATION

The decision-making processes were supported by a system of communication that linked up the different decision centres. Since the organization during emergency had greater need for field data and information, a methodical information transmitting system was built up. Major forms of communication were reporting and issuing of orders and instructions, visits, meetings—both formal and informal, telephonic and telegraphic messages, and face-to-face contacts. The collectors were asked to submit to the Secretariat a number of fortnightly reports on the field situation. The collectors, in turn, were asking for similar reports from the operating agencies and field personnel. Meetings between officers at different levels and at the same level increased considerably which were either formally prescribed or informally organized. From the data collected, it appears that the number of meetings between district level officers had almost doubled during emergency, as compared to normal times.

One significant feature of scarcity administration has, however, been that the field orientation of officers from the Secretariat down to the District level has been distinctly evident throughout the operations. Enhanced inter-personal contacts and better knowledge of the field situation have been the direct outcome of the communication network evolved during scarcity.

BUREAUCRATIC RULES

In this connection, special mention should be made of the prolific issue of rules by the Secretariat to guide the field operations. In 1970-73,

as many as 350 rules and orders were issued. At the beginning, these were few and far between; as the crisis was deepening, the rules started coming like an avalanche. During peak scarcity between July 1972 and July 1973, more than 250 instructions were sent down to the field. This is indicative of the Secretariat's growing anxiety to bridge the psychological distance between the headquarters and the field. It is generally complained that the rigidity of rules stands in the way of their adaptability to changing conditions. As rules are elevated as ends in themselves, the Mertonian 'goal displacement' sets in. This kind of bureaucratic pathology was not evident to a significant extent during the scarcity relief operations, because of the incessant flow of rules from the Secretariat. Thus, instead of allowing a rule holiday, the headquarters organization saw to it that the rigidity of rules is promptly rectified by quick replacement, amendments or additions. Note the following directive from the Secretariat: "It has come to the notice of Government that immediate steps are no doubt taken to provide relief to the persons affected by the natural calamities; at the same time rules and regulations for granting such relief are not strictly followed; though the intention behind giving this relief immediately to the sufferers is to relieve the sufferers from the difficulties, while providing such relief it should always be ensured that no procedural irregularities are committed." (G.C.R. & F.D., No. CFL-5964/7314-S dated April 5, 1971). Thus there was no relaxation of rules, yet the tasks did not suffer owing to constant efforts at rules adaptability.

HIERARCHY

In a bureaucratic organization, hierarchy serves the purpose of role fixity. Since everybody's place in the organization is formally set, there is greater degree of predictability of behaviour. This kind of rigidity in role-relationships might suit a stable situation. In times of disaster, the organization's chief purpose would be to ease the pressure on it from the environment, for which new patterns of interpersonal relationship might emerge, and even be encouraged. This is confirmed by the working of the relief administration during the recent emergency. Cases of level jumping were quite common; the Tahsildar would frequently be communicating directly with the Collector by-passing the Sub-Divisional Officer. The Block Development Officer and the Executive Engineer of the Zilla Parishad were not always to go through the Chief Executive Officer to address the Collector. Such short-circuiting was in fact encouraged for the sake of quick action. (To the extent this was happening, the rigidity of bureaucratic hierarchy was considerably modified. However, it was the higher authority—the Collector—who was really calling the tune. When flexibility was not needed, the collectorate would slide back to the normal mode of working and the tahsildar would be asked to submit proposals, say for community wells, through the 'proper channel'. In a period of hectic activities when everyone, howsoever placed

in the hierarchy, was concerned about quick relief measures, bureaucratic rigidity was sought to be replaced by a more functional flexibility. There were more face-to-face contacts among different role-incumbents. The Collector would be on tour for 12 to 15 days a month, the Divisional Commissioner and the Revenue Secretary were frequently visiting the affected areas, even the Chief Minister would be personally visiting a district once or twice a month. At the Secretariat level, the superior-subordinate relationship had undergone a change and lower level officials would be frequently meeting the superior officers disregarding normal hierarchy. The same thing happened at the district level where the Collector would be writing directly to the tahsildar and the block development officer, or call the Zilla Parishad engineer at odd hours. The new pattern of interpersonal relationship was naturally accepted by everybody concerned, as this was highly suitable for the emergency situation. At lower levels, the morale in consequence was very high and the personnel put in extra hours of labour without looking for immediate benefit.

Scarcity administration had evolved its own informal hierarchy pattern. The Tahsildar, for example, became an important point of reference at the sub-district level. Many a time he had assumed the position of a transmitter and distributor of information and instructions to the Block Development Officer and the Deputy Engineer of the Zilla Parishad. Being in constant touch with the Collector, he had come to enjoy some kind of a reflected authority which was accepted by the BDO and the Deputy Engineer.

Formally, the Collector's position was supreme at the district level. From the responses of other field officers, it appears that most district level functionaries perceived the Collector's authority as functional, which signified a large 'area of acceptance' of his authority. In practice, however, the Collector's authority was much less than what was formally envisaged. There were constant interventions from the highest level, as the political leadership and the State level administrators were all worried about the field situation. At the district level and below, the Relief Committees had their influences on him, and the local politicians had not turned good samaritans over night. Also, in the work organization, technology had to be respected in allocation of functions. Unpleasant decisions would sometimes travel up to the highest level wherefrom counter directions would be coming down to the field restraining the authority of the Collector. All this shows that the scarcity administration did not produce an absolutist concept of the Collector.

DELEGATION

There was substantial delegation of powers to officers at different levels, to enable them to perform the assigned tasks. The Collector, for instance,

was empowered to give administrative sanction, at the peak of scarcity, to schemes amounting up to Rs. 10 lakhs. Correspondingly, the Executive Engineer's power of giving technical sanction was increased to the same amount. Delegation led to the enhancement of organizational capacity without augmenting the already available resource structure. When the Block Development Officer was appointed as the drawing and disbursing officer, or the Sub-overseers were empowered to record measurement of works, these steps permitted the officers at these levels to undertake tasks which they would not be performing in normal times. In this way, the organization's capacity to cope with the emergency situation was increased by maximising the use of available resources. Two important consequences flowed from such delegation of powers. Delegation facilitated substantial reduction in normal bureaucratic hierarchy.

Another resultant benefit was the cutting down of procedural requirements and avoidance of administrative delay. Payments to scarcity labour had to be made very promptly, and one of the devices adopted for this purpose was to appoint the Block Development Officer as the drawing and disbursing officer, who could thus exercise this authority without reference to the Chief Executive Officer, Zilla Parishad. Delegation, during scarcity relief operations, thus, revealed the latent capacity of the organization to handle more tasks than what it ordinarily undertakes to do.

CONTROL

In a massive operation of this kind, appropriate controls are necessary mainly for two reasons. Firstly, these are needed for monitoring purposes. A constant watch is necessary on field performance so that corrective action can be taken in time. Secondly, controls are useful in ensuring accountability. A system of controls was built into the scarcity organization through specific roles and an elaborate communication pattern. The major control points were the Revenue Department at the State level and the collectorate at the district level. By way of feedback, relevant field data were gathered at these two points through a planned system of reporting. The collectorate would be the first tier from where detailed consolidated reports on district scarcity administration would be passed on to the Revenue Department. This process was helpful in evolving an information-based control system.

Information was being collected through other methods also such as visits, inspections, and meetings—both formal and informal. In consequence, scarcity administration had come to develop an "interaction—
influence system" which seemed to have turned control into guidance and helped to boost the morale in general. The Chief Minister along with high officials would be coming down to the district and giving instructions on the spot. The Divisional Commissioner, while on tour of the affected areas,

would be noticing the malfunctioning of community wells project which he would immediately bring to the notice of the Collector suggesting corrective action. The Collector in his turn would impress upon the lower level functionaries such as the Tahsildar and the Block Development Officer the need for speedy action and fulfilling specific targets. These interactions between different functionaries produced intraorganizational integration. The controls from the secretariat through the issue of rules and instructions ensured conformance to standard procedures and accountability of the field level officers to the State Government *via* the Revenue Department.

An important feature of the system of controls evolved during emergency was that it was geared to the achievement of specific operational tasks such as construction of roads, percolation tanks and community wells. At the district level, the tasks were being allocated to different implementing agencies, and controls were being exercised to achieve specified targets. There was thus close approximation to a management-by-objective model within which controls tended to be more purposive and specific tasks oriented.

Delegation of powers, as earlier described, led to the dispersal of a great deal of controlling authority among a number of lower level functionaries such as the overseer, the Block Development Officer and members of the village panchayat. For instance, the BDO in consultation with the Deputy Engineer was authorised to supervise the site selection operation for community wells, and they could even reject the proposals of village panchayats. Following Tannenbaum¹², one can suggest that controls within scarcity organization had increased more than in normal administration. With power assigned to functionaries at different levels, scarcity organization paved the way for enhanced participativeness.

BUREAUCRATIC RESPONSE: AN OVERVIEW

Gleaning from the narration just completed, we may now try to build up an integrative picture of the nature of bureaucratic response to emergency. Turning first to organizational convergence, there was clear evidence of organizations of all kinds getting together to face the challenge of scarcity. The departments of government, the panchayati raj organization, and a host of public, semi-public and private organizations joined hands together to give succour to the affected population.

There are clear indications that the organizational performance structure was considerably altered to suit the needs of the emergency and to increase organizational capacity to cope with the demand overload. (As a new administrative structure was evolved, it meant adoption of a new normative

¹² Arnold S. Tannenbaum, *Control in Organizations*, New York, McGraw-Hill Book Company, 1968.

structure with new roles and relationships. The interpersonal structure of scarcity organization had its own peculiarities. There is evidence to suggest relaxation of formalism and hierarchy and the use of more face-to-face contacts. Within the common framework of a shared goal, the relief organization experienced a more relaxed superior-subordinate relation, and functional, rather than formal, interpersonal relationship. The resources structure of the emergency organization had undergone substantial changes including augmentations of personnel, material and financial resources in order to enhance its coping ability.

The structural elements of the bureaucratic organization, viz., role fixity and hierarchy, division of labour and rules application, had undergone significant changes. The emergency administration evolved its own structure within which new roles had appeared. The collector's span of control and attention had both increased. The officers of the engineering departments were taken away from their vertical departmental lines and placed under the collector. There was a merger of state administration and panchayati raj administration. All these are instances of role changes during emergency.

The technology of distinct tasks had to be respected in allocating works to different organizations. Thus, division of labour was largely along older organizational boundaries. Yet, there were intermittent transfers of resources of all kinds between one organization and another. Personnel and vehicles, for example, were moved from one department to the other to facilitate the accomplishment of tasks. Bureaucratic hierarchy had shed some of its rigidities, as the officers at different levels were meeting more frequently and visiting the affected areas and giving advice on the spot. There were instances of level-jumping. A few hierarchical levels were cut out to reshape the organization. For instance, the tahsildar was in direct touch with the collector, and not generally going through the SDO. The tahsildar had the reflected glory of the collector. At the ground level, he had become the linkman between the collector and all other functionaries such as the BDO and members of the panchayats. What happened was that the rigidity of hierarchic formalism was greatly reduced under the impact of scarcity and a kind of informal organization had grown up at the lowest level. There was a greater degree of inter-personal contacts at all levels as everybody, irrespective of his official rank, was anxious to alleviate the misery of the afflicted population.

A striking feature of the emergency operations was the torrential issue of rules. The Secretariat was in no mood to relax the rules governing ground-level operations. Instead of minimising the importance of rules, orders and instructions were regularly being issued with greater frequency and in larger number. Thus there was constant insistence on the observance of

bureaucratic formalism. The rigidity of bureaucratic rules which could have been disastrous during emergency was circumvented not by declaring a rules holiday but by ceaseless outpouring of rules. In a crisis situation, the headquarters administration was making its constant presence felt at the field level through the incessant issue of rules and instructions. This phenomenon gives evidence of an attempt on the part of higher level administration to converge at the scene of disaster.

As the bureaucratic structure showed signs of changes, this manifested itself in new modes of decision-making, rapid communication flows, increased delegation and purposive administrative controls. Strategic decisions regarding priority works, allocation of resources and personnel were concentrated at the Secretariat level. Operational decisions concerning screening of projects, their locations and tasks allocation among different agencies were being taken at the district level. At the lowest level, certain decisions were allowed to be taken by such functionaries as the BDO and members of the village panchayats. This three-tier structure was intimately interlinked. There was constant feedback from the field to the headquarters. Similarly, the headquarters organization was in constant touch with the ground level operations. Decision-making at each point in the vertical line was data-based, and there was a close match between the type of decisions and the decision-centre in each case, based more or less on the technical competence of each centre and availability of data at that particular point.

The communication process built up through a regular reporting system lent support to the decision-making structure. Other modes of communication were issue of rules, frequent field visits by ministers and secretariat officers and occasional visits to Sachivalaya by the field officers like the Divisional Commissioner and the Collector. Communication had become more humanised when the State political bosses met the field officers at frequent intervals and gave them encouragement. Similarly, superior officers from the Secretariat were in constant touch with the personnel engaged in actual operations. This had the effect of engendering a sense of camaraderie among all classes of personnel bearing the heavy burden of scarcity works, and raising the morale especially at lower levels of the bureaucracy. Delegation of powers to lower level functionaries facilitated speed in operations. It had also permitted the personnel at the operational centres to exercise more power which satisfied their ego considerably.

In a large scale operation like the one just described, it was not possible to depend on traditional control mechanisms such as calling for records and returns, inspections and spot visits. The reporting system did, of course, serve the purpose to some extent, but whatever controls were actually exercised had to be left to be exercised by the touring officials and the vigilant local

village leaders. The formal controls were instituted more for monitoring purposes than for tightening up administrative supervision. What was more important during the crisis was not negative control but positive guidance and removing of operational bottlenecks.

To conclude, the bureaucratic organization during the Maharashtra emergency operations appeared to have shed much of normal-time rigidity. There were significant changes in the basic structural components and operational nuances of the bureaucracy which seem to suggest that in an emergency of this kind, the bureaucratic organization would not be the same as the Weberian inflexible and impersonal machine.

REFERENCES

1. Government of Maharashtra, *Report of the Fact Finding Committee for Survey of Scarcity in Maharashtra State*, 1973, Vol I (Bombay, Government of Maharashtra).
 2. Government of Maharashtra, *The Bombay Scarcity Manual* 1962, (Bombay, Government of Maharashtra).
 3. Government of Maharashtra, *Scarcity: A Compendium of Government Orders*, 1973, Vols. I & II (Bombay, Government of Maharashtra).
-

RELIEF PLANNING IN MAHARASHTRA*

Sudipto Mundle

THE widespread occurrence of drought in 1972-73 and again in 1973-74 has had a sobering effect on our optimistic expectations regarding the performance of agriculture since the launching of the New Agricultural Strategy. It now seems that Indian agriculture will continue to be dependent on natural climatic factors for quite some time to come. Moreover, since these natural climatic conditions turn out to be disastrous after every few years, it seems that we shall have to live with the phenomenon of drought till such time as when our irrigation facilities are sufficiently developed as to render the agricultural sector more or less independent of these climatic factors.¹ Under these circumstances the planning and execution of drought relief programmes assume great importance, particularly because such programmes are aimed at protecting the rural poor who are most vulnerable to these natural calamities.

This paper evaluates the planning and execution of one such drought relief employment programme (henceforth referred to as DREP) in Aurangabad district of Maharashtra which was one of the worst affected districts during the drought of 1972-73. In particular, the paper examines to what extent the planning and execution of DREP was consistent with the overall objectives laid down for the programme. It also attempts to measure the impact of an explicit relief planning exercise on efficient implementation of the programme.

The programme evaluation criterion has been set out in Section 1. In Section 2 this criterion has been applied to evaluate the 'Scarcity Plan' which was formulated for generating relief employment in Aurangabad district during the latter half of the agricultural year, 1972-73. The impact of this 'Scarcity Plan' on the actual operation of DREP in Aurangabad has been analysed in Section 3. Finally the major policy implications of the paper have been remarked upon briefly in Section 4.

* This paper is based on a study conducted at the Indian Institute of Public Administration with the help of a research grant from the Indian Council of Social Science Research. I have benefited from the comments of an anonymous referee of the Council on the major report. I am also indebted to several colleagues at the I.I.P.A., especially those on the Maharashtra drought project, for their suggestions and to N.C. Ganguli for helping me with some computations.

¹ On this question, see Report of the Irrigation Commission, Government of India, 1972. Also A. Rangaswami, "Financing Famine Relief: Calling the Bluff", *Economic & Political Weekly*, Vol. IX, Nos. 45 & 46, Nov., 1974.

1. THE PROGRAMME EVALUATION CRITERION

It is always possible to employ some 'ideal' theoretical project evaluation criteria which bear no relationship to the specific circumstances or constraints under which a particular programme was undertaken and then smugly conclude on the basis of such unreal criteria that the programme in question was an economic disaster. (While the setting up of such criteria might have some aesthetic appeal for the economic theorist, their relevance to an administrator on the field is often quite remote. Consequently, in this paper, we have tried to set up a criterion of evaluation which is based on the specific objectives which were laid down by the government for DREP and which is related to the conditions under which the programme was undertaken.

Drought, like any other emergency, entails policy choices which deviate from the normal development path, *i.e.*, the redeployment of some development expenditure for the drought relief programme. Under these circumstances the desirable course of action would be to adopt 'second best' choices in the sense of relief programmes which cater to normal developmental objectives as far as possible subject to meeting the requirements of the emergency. The government itself recognised this sound economic principle, in laying down the objectives of DREP, by repeatedly stressing that resources should be employed on productive works so that DREP did not become an unnecessarily wasteful diversion of scarce developmental resources.²

Since the government itself attached prime importance to 'productivity' as a determinant of priorities in the allocation of resources under DREP, this has been adopted as the basic objective in setting up our programme evaluation criteria in this paper. Operationally this would mean that a higher weightage would have to be given to those categories of projects in DREP which would ultimately lead to an expansion of output or improvement of services. Moreover in the context of a drought prone area 'productivity' should be interpreted so as to include contributions of a project not only towards *expansion* of agricultural output but also *stabilisation* in the sense of reducing or eliminating those factors such as dependence on rainfall, etc., which lead to high instability and frequent collapse of agricultural operations.

In terms of 'productivity' as we have just defined it, the different types of projects under DREP may be grouped into three broad categories. See Table 1.

Of these, irrigation works of category A are by far the most productive. The basic development strategy in Maharashtra's 5th Five Year Plan is to

² See (i) B.K. Chougule, Plan of Works to Meet the Scarcity Situation in Aurangabad Division. (ii) The Bombay Scarcity Manual (Draft) Bombay 1962. (iii) Scarcity—A Compendium of Government Orders, Government of Maharashtra, 1973. (iv) Report of the Fact Finding Committee for survey of Scarcity Areas, Maharashtra State, 1973, Vol. 1, p. 88. (v) Report of the Finance Commission (sixth), Government of India, New Delhi, 1973.

TABLE 1

<i>Category</i>	<i>Benefits</i>	<i>Type of Projects</i>
A. Irrigation Works	Increasing agricultural production. Reducing drought potential	(i) Major & Medium Irrigation (ii) Minor Irrigation
B. Land Improvement Works	Increasing agricultural production	(iii) Well Irrigation (iv) Soil Conservation (v) Afforestation
C. Other Works	Improving transport infrastructure	(vi) Metal breaking for road and rail construction (vii) Road Construction.

stabilise agricultural production at an appreciably higher level primarily through the rapid expansion of irrigation facilities. Accordingly as much as 25 per cent of total plan outlay has been demarcated for irrigation.³ In Aurangabad District itself an overall growth rate of 7 per cent per annum is sought to be achieved through a 20 per cent to 25 per cent increase in agricultural output. And this expansion of agricultural output is expected to follow, in the main, from a doubling of irrigated acreage from 7.8 per cent of cultivated area to as much as 16 per cent.⁴ Secondly, in a highly drought prone district like Aurangabad the only long term remedy for preventing the frequent collapse of agricultural operations is again irrigation.

The land improvement works of category B are also productive in the sense that they improve or conserve the productivity of the soil. Moreover, a large volume of these works were already being planned for in the normal development plan of the district⁴ and, being widely dispersed, these works could be conveniently located for relief employment without much population migration. However, it is evident that compared to the high productivity of irrigation works, land improvement works would take second place.

Finally there are the works of category C such as metal breaking and road building. While these need not be completely unproductive⁵ as is popularly believed, it is clear that their productivity is at best limited. Thus it is

³ See Draft Outline of 5th Five Year Plan, Maharashtra State.

⁴ See Fifth Five Year Plan (1974-75 to 1978-79). District Planning Board, Aurangabad District, 1973 (henceforth referred to as District Plan).

⁵ See W. Ladejinsky, "Drought in Maharashtra, Not in a Hundred Years," *Economic & Political Weekly*, Vol. VIII, No. 7.

often uneconomical to transport the broken metal to construction sites while roads with only the earth work done under a scarcity programme get washed away with the first monsoon. Consequently these works come lowest in a broad 'productivity' ordering of the different types of projects in DREP.

So far we have tried to order projects under DREP according to their productivity. However, while this was the primary objective laid down by the government for determining the allocation of resources, this was not the only objective. A second important objective which has to be considered is cost efficiency.⁶

TABLE 2

<i>Project</i>	<i>Cost Coefficient (c_i)</i>	<i>Rank</i>
Major & Medium Irrigation	47.0	6
Minor Irrigation	57.0	7
Well Irrigation, etc.	39.8	3
Soil Conservation	33.8	2
Afforestation	20.0	1
Metal Breaking	40.6	4
Road Construction	41.1	5

The Government's concern for cost minimisation stemmed from the inflationary situation in which the drought occurred and to which it gave further impetus. During the period of drought under consideration, Maharashtra State alone spent as much as Rs.140 crores to provide relief employment to the displaced agricultural community of the order of as much as fifty lakh persons per day during the peak period. Most of this wage employment, even if used in productive channels, could at best be expected to lead to higher output on a future date. But the wages paid would be immediately used to purchase consumer goods, especially grain, in a period when the market was already experiencing shortages. The inflationary implications of this situation and the consequent concern of the government to hold down costs in DREP are obvious. Cost minimisation has accordingly been adopted as the second important objective in developing our programme evaluation criteria.

Operationally, the cost efficiency objective would require that a project x be preferred to another project y , other things being equal, if the cost of a certain volume of employment be less in x than in y . In order to apply this

⁶ See (a) Scarcity Manual, p. 4; (b) Scarcity—A Compendium of Government Orders, p. 20, etc.

rule the different projects under DREP would have to be ranked according to the cost per unit of employment in each project. This cost coefficient of a project can be easily worked out by applying the formula

$$c_j = \frac{\sum_{t=1}^{\tau} C_{tj}}{\sum_{t=1}^{\tau} W_{tj}} \quad \begin{matrix} j=1 \dots\dots\dots 7 \\ t=1 \dots\dots\dots 12 \end{matrix}$$

where c_j is the cost per unit of employment in project j ; C_{tj} is the expenditure on j th project in t th month and W_{tj} is the number of manmonths of employment in j th project in t th month. The cost coefficients and the corresponding ranks of the different types of projects in DREP have been given in Table 2.

Both the productivity objective and the cost efficiency objective have to be incorporated into the programme evaluation criteria. But by comparing the earlier productivity ordering of projects with the cost efficiency ranking of Table 2 it will be seen that the two objectives and the project rankings which they generate are in conflict.

Projects with multiple objectives can be ranked in a cost benefit model by applying a quantitative weighting scheme. In the present case, however, there being only two major objectives, we can employ a more simple lexicographic device where the broad groups are first classified according to the more important 'productivity' criteria and then projects within each category are ranked by their respective cost coefficients. In this way, the two criteria are combined into a single criterion for generating one consistent ranking. This simple lexicographic ranking system has been demonstrated in Diagram 1.

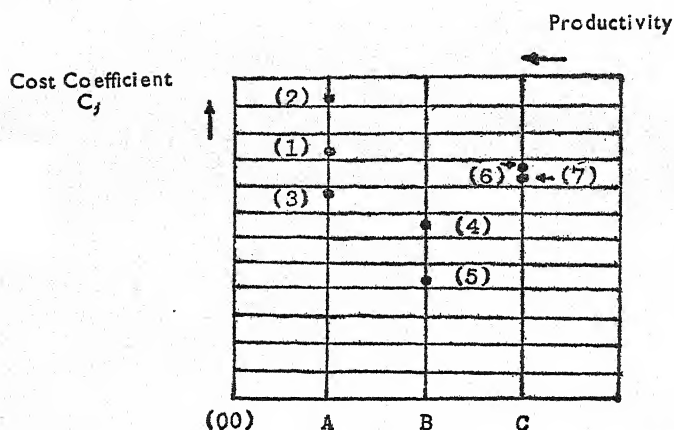
The ranking generated through the above procedure is as follows:

- 1st : Well Irrigation
- 2nd : Major and Medium Irrigation
- 3rd : Minor Irrigation
- 4th : Afforestation
- 5th : Soil Conservation
- 6th : Metal Breaking
- 7th : Road Building

This ranking of different types of projects under DREP can now serve as the programme evaluation criterion for analysing to what extent the planning and execution of DREP was consistent with the objectives which government had laid down for the programme. We shall also use this criterion to measure the impact of an explicit relief planning exercise on the efficient implementation of the programme.

DIAGRAM I

LEXICOGRAPHIC RANKING OF PROJECT



KEY:

1. Major and Medium Irrigation
2. Minor Irrigation
3. Well Irrigation
4. Soil Conservation
5. Afforestation
6. Road Construction
7. Metal Breaking

Rank increases towards origin along both areas.

In effect what our programme evaluation criterion provides is a reconciliation of the inconsistency between the traditional view on famine relief which is to ensure work at a low cost per unit of employment with the recent thinking of, for example, the Sixth Finance Commission which lays stress on utilisation of relief expenditure to complete plan schemes. The former is an attempt to hold down short run costs and maximise employment with limited concern for the development implications of the resource diversions. In contrast the recent thinking is more concerned about the long run developmental cost of such resource diversion and therefore lays stress on utilising these resources for plan schemes. As Rangaswami has recently pointed out,⁷ this could imply much smaller numbers on relief for a given amount of funds if the cost per unit of employment is higher on the developmental plan schemes. Secondly, major developmental schemes may not be available in the affected regions. On this ground, Rangaswami has concluded that the integration of 'plan works' with 'destitute relief works' is questionable and that

⁷ A. Rangaswami, *op. cit.*

governmental action following the Finance Commission recommendation is based on false assumptions.

As it happens the tight resource situation leaves no choice but to try and integrate 'plan work' and 'destitute relief works'. Secondly the ranking developed by us takes care of the objections to 'plan works' for relief.

Our lexicographic ranking identifies developmental projects or 'plan works' such as well irrigation, which at the same time involve no higher cost per unit of employment than the unproductive 'destitute relief works', as the ones to be given highest priority and spells out a complete ranking of priorities between projects giving weightage to both the long term developmental objective as well as the short term relief objective.

This strategy resolves the conflict between the traditional approach to drought relief and the new thinking on this question—a conflict which Rangaswami seems to find irreconcilable.

2. SUBOPTIMALITY OF THE SCARCITY PLAN

The principal instrument of policy that needs to be considered in an analysis of the consistency between stated goals and the operational plan for DREP is the pattern of resource deployment between different projects under the programme. Since the programme evaluation criterion which we have developed above is precisely a priority ranking of the different projects in terms of the objectives of DREP, a comparison of the planned pattern of resource deployment with the above ranking provides a direct and simple test of the optimality or suboptimality of the Scarcity Plan.⁸

The Scarcity Plan, which was ready only by January 1973, was operational for the second half of the agricultural year July 1972 to June 1973, though a further three months was included as a tapering off period for the relief operations. For this paper, we have considered only the core period of the plan or the first six months from January 1973 to June 1973 since this is the period which falls within the agricultural year July 1972 to June 1973. The agricultural year 1972-73 was taken as the reference period for purposes of collection of primary data regarding the actual execution of DREP.

Unfortunately, specific targets regarding fund deployment, employment generation, etc., for the six months core period of the plan are not available directly in the plan since the plan was hurriedly formulated, after the failure

⁸ The Scarcity Plan was a plan of action specifying the allocation of funds, generation of employment, etc., in different types of projects during the relief programme. It is contained in the document 'Plan of Works to Meet the Scarcity Situation in Aurangabad Division'. See B.K. Chougule, *op. cit.*

of the Rabi Crash programme, and no detailed time phasing was spelt out in the plan. These targets have consequently had to be interpolated from the broad framework provided in the plan.

Employment was to be raised, according to the plan, from 2.68 lakh persons at the initial point, *i.e.*, beginning of January 1973, to as much as 5.3 lakh at the end of the core period, *i.e.*, June 1973. By assuming a constant linear pattern of expansion of the form

$$\begin{aligned} N_{tj} &= A_j + B_j (t-6) & j &= 1 \dots\dots 7 \\ B_j &= 1/6 (T_j - A_j) & t &= 7 \dots\dots 12 \end{aligned}$$

where N_{tj} is average daily employment on j th project in t th month, T_j is the potential peak to be reached by June 1973, and A_j the initial daily employment on project j at the end of December 1972 ($t=6$), we have interpolated the monthly employment target for each project as implied in the plan. The parameters A_j & T_j are taken from Annexure XVI of the Scarcity Plan document. The interpolated plan employment targets have been reproduced in Table 3 with the twelve work categories suitably redefined to coincide with the seven categories by which primary data on the actual execution of the programme were available.

The total planned expenditure for the six months up to June 1973 was Rs. 500 lakhs. However, the project-wise allocation pattern was not specified for each month and had to be estimated for this core period from the allocation pattern of the total budget of the plan. This was done on the basis of the

$$\begin{aligned} \sum_{t=7}^{12} X_{tj} &= k \sum_{t=7}^{15} X_{tj} \\ k &= \frac{\sum_{t=7}^{12} \sum_{j=1}^7 X_{tj}}{\sum_{t=7}^{15} \sum_{j=1}^7 X_{tj}} \end{aligned}$$

formula where X_{tj} is the estimate of planned on j th project in the t th month. The estimated allocation pattern has been reproduced in Table 4 col. 3. Table 4 which brings together the planned employment and expenditure pattern may be taken to represent the basic profile of the Scarcity Plan.

Comparing this with the programme evaluation criterion developed earlier we find the plan inadequate in several respects.

To begin with we find that the cost coefficients of employment in the projects (Table 4 col. 4) implied in the allocation of employment and expenditure between different projects in the plan are quite unrealistic compared to the actual cost coefficients which have been reproduced in Table 2. Not only are they unrealistic in absolute terms but even in relative terms

TABLE 3

EMPLOYMENT PROJECTIONS OF SCARCITY PLAN

Type of Relief Work	A	B	N ₇	N ₈	N ₉	N ₁₀	N ₁₁	N ₁₂	(Figures in thousand)	
									$\sum_{t=7}^{12} N_t$	N_t
1. Major & Medium Irrigation	2	0.8	2.8	3.6	4.4	5.2	6.0	6.8	28.8	
2. Minor Irrigation	1	3.2	4.2	7.4	10.6	13.8	17.0	20.2	73.2	
3. Well Irrigation, etc.	17	5.5	22.5	28.0	33.5	39.0	44.5	50.0	217.5	
4. Soil Conservation, etc.	12	10.2	22.2	32.4	42.6	52.8	63.0	73.2	286.2	
5. Afforestation	0	0.4	0.4	0.8	1.2	1.6	2.0	2.4	8.4	
6. Metal Breaking	37	3.8	40.8	44.6	48.4	52.2	56.0	59.8	301.8	
7. Road Building	39	1.8	40.8	42.6	44.4	46.2	48.0	49.8	271.8	
Total	108	24.0	132.0	159.4	185.1	204.0	228.0	225.0	1152.0	

SOURCE: B.K. Chougule, *Plan of Works to Meet the Scarcity Situation in Aurangabad Division*, Annexure XVI, p. 39.

- (a) The estimates of the intercept A are derived from the figures for existing labour strength at the end of December 1972, expressed to the nearest thousand.
- (b) The estimates of B correspond to the slope of the assumed employment expansion path.
- (c) The values of N_t , $t = 7 \dots 12$, correspond to the interpolated employment estimates of each month, January 1973 to June 1973.
- (d) Monthly Employment has been defined here as the average number of labourers attending per day in a given month.

TABLE 4
SCARCITY PLAN TARGETS

<i>Type of work</i>	<i>Estimate of planned employment (Jan.-June) (000)</i>	<i>Estimate of planned expenditure (Jan.-June) (000)</i>	<i>Estimated cost- coefficient of Employment (Scarcity Plan)</i>
(1)	(2)	(3)	(4)
1. Major & Medium Irrigation	29 (2.4)	1420 (2.7)	49.0
2. Minor Irrigation	73 (6.1)	3409 (6.5)	46.7
3. Well Irrigation, etc.	218 (18.4)	14773 (28.3)	67.8
4. Soil Conservation, etc.	286 (24.1)	16364 (31.3)	57.2
5. Afforestation	8 (0.7)	682 (1.3)	85.3
6. Metal Breaking	302 (25.4)	11364 (21.7)	37.6
7. Road Construction	272 (22.8)	4261 (8.2)	15.7

SOURCE: B.K. Chougule, *Scarcity Plan*, p. 39, Annexure XVI.

(a) Column (4) gives the estimated cost per man-month of employment, i.e., Col.(3) ÷ Col.(2)

(b) Figures in parentheses give percentage to column total.

(c) Column (2) is reproduced from Table 1. It gives the values of $\sum_{t=7}^{12} N_t$ for each j, j=1....7.

the ordering between the cost per unit of employment in different projects is distorted. Thus 'afforestation', which should have the lowest cost of employment has the highest according to the plan. The cost of employment in road construction implied in the plan turns out to be less than half of the actual cost and is similarly underestimated for minor irrigation while the estimates for well irrigation and soil conservation are far too high. This wide disparity between the actual cost coefficients and those implied in the plan indicate that the employment targets were not matched with the financial allocation pattern, i.e., one part of the plan has no consistent relationship with the other.

A second inadequacy far more serious than the internal inconsistency of the plan discussed above, is to be found in the priorities reflected by the pattern of resource allocation in the plan. According to the criterion set

up earlier, an optimal plan would have deployed the highest quantum of resources to the most productive irrigation projects of category A; within this the highest share will go to well irrigation as being the most economical. A smaller quantum would have been deployed to the less productive land developing works of category B and the smallest share would have gone to the unproductive works of category C. Instead of this, the Scarcity Plan allocated more or less equal shares to each category, A gaining marginally at the cost of C. Comparing the allocation between individual projects, we find that a middle ranking project like soil conservation got as much as 30 per cent of the total outlay while a bottom ranking project like metal breaking got a share similar to that of the top ranking project, well irrigation.

A question now arises, why was the allocation of resources envisaged in the Scarcity Plan suboptimal? Was it purely an *ad hoc* pattern of fund development? It would seem that this was not the case. The programme evaluation pattern developed by us sets up allocation priorities on the basis of a combination of two objectives—productivity and cost efficiency. While being suboptimal in comparison with this combined priority ranking, the planned allocation pattern seems to have followed the single objective of cost efficiency fairly closely. If we leave out of consideration major & medium irrigation works and afforestation, both of which have severely limited physical possibilities of being undertaken at short notice during a drought, then we find that the planned allocation pattern is completely consistent with the priority ranking of different projects by their cost coefficients only which has been set out earlier in Table 2.

In other words, in their planning of the drought relief operations, administrators in Aurangabad district seem to have opted for the traditional formula of providing 'destitute relief works' for ensuring employment at low cost per unit rather than the modern strategy outlined in various government documents, especially the Report of the Sixth Finance Commission. As we have seen earlier, the modern strategy lays more stress on minimising the long term costs rather than the immediate cost in the sense that it tries to prevent the deviation of resources from developmental tasks by converting the 'plan works' themselves into relief works. Of course as we have demonstrated in our formulation of the programme evaluation criterion, the two strategies can be made consistent and we can minimise both the immediate unit employment cost as well as the long range developmental cost of relief employment programmes by following a simple lexicographic system of ranking priorities.

3. IMPACT OF RELIEF PLANNING

Our evaluation of the Scarcity Plan in the preceding section revealed that in terms of the programme evaluation criterion set up earlier the resource

allocation pattern of the plan was suboptimal, *i.e.*, it was not optimal from the point of view of meeting the objectives explicitly laid down by the government itself for DREP. This still leaves open the question of what impact the plan, its shortcomings notwithstanding, had on the actual execution of the programme. From the methodological point of view we have a very convenient procedure for measuring the impact. The reference period of our analysis is the full agricultural year, July 1972 to June 1973. Of this period exactly half the period, *i.e.*, the later six months, January 1973 to June 1973 was covered by the Scarcity Plan. Thus by comparing the unplanned first half of the year, which we have called Period I, with the planned second half of the year, which we have called Period II, we can get a fairly good idea of the impact of the plan on the actual performance of the programme. At the same time, we can carry out our evaluation of programme execution in terms of the programme evaluation criterion formulated earlier.

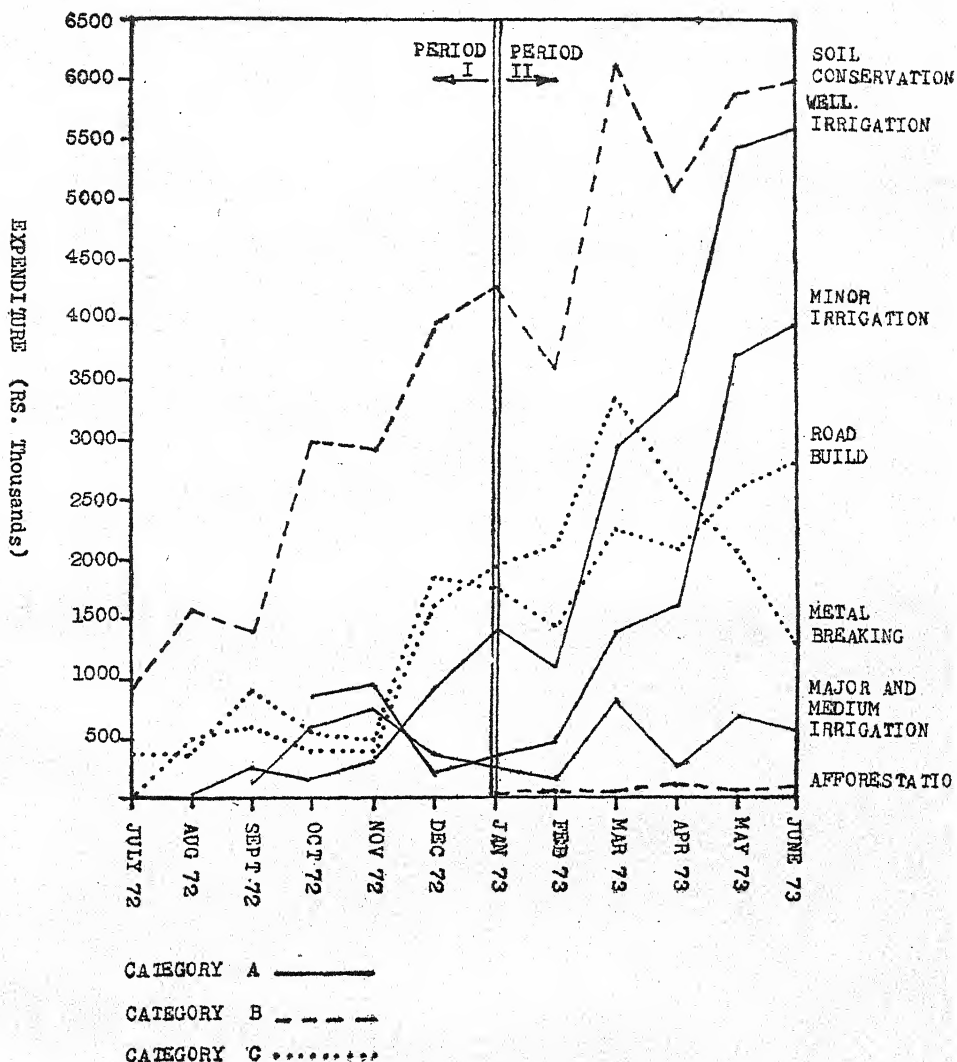
The time path of resource allocation between different types of projects has been displayed in Diagram 2. Comparing individual projects we find that a middle ranking project like soil conservation dominated all the others throughout the entire period. Still worse, relatively unproductive projects like metal breaking and road building seem to have got larger outlays than the different types of productive irrigation works—even a top ranking project like well irrigation—during a large part of the year.

The net consequence of this allocation pattern was that for the year as a whole land improvement works, mainly soil conservation, got the bulk of the total outlay. This amounted to approximately Rs. 4.5 crores or almost 40 per cent of total outlay. Meanwhile, the most productive works like well irrigation, etc., of category A and the most unproductive works of category C like metal breaking and road construction got more or less equal shares amounting to approximately Rs. 3.6 crores and Rs. 3.4 crores respectively. See Table 5, page 881.

The picture compared in terms of manpower allocation is worse. The middle ranking land improvement works absorbed almost half of the total man hours of employment generated under DREP while the top ranking productive works again equally shared the remainder with the unproductive works, category A and category C getting 8.1 lakh man months and 8.3 lakh man months respectively. See Table 6, page 882.

Thus the actual execution of DREP also turns out to be highly inoptimal when evaluated in terms our programme evaluation criterion. It is not easy to measure the physical aspects of the programme. However, if we look at this aspect in addition to the financial and manpower aspects, the programme would probably turn out to be even more inefficient. It is generally believed

DIAGRAM 2
TIME PATH OF FUND DEPLOYMENT



that the quality of work done would not stand up to rigorous technical standards and in fact, data are available to indicate that a very large number of works were taken up but never completed. This seems to be particularly true for the different types of irrigation works under category A. See Table 7, page 883.

For purposes of measuring the impact of the plan, however, it is not enough to review the year as a whole. As we noted earlier, we can

TABLE 5

PLANNED AND ACTUAL EXPENDITURE PATTERN

(Rs. in thousands)

Type of work	Whole Year			Period I		Period II		Scarcity Plan	
	(July 72—June 73)			(July 72—Dec. 72)		(Jan. 73—June 73)		(Jan. 72—June 73)	
1. Major & Medium Irrigation	3190	(2.8)		483	(2.1)	2707	(3.0)	1420	(2.7)
2. Minor Irrigation	11864	(10.3)		394	(1.7)	11470	(12.6)	3409	(6.5)
3. Well Irrigation, etc.	21300	(18.5)		1544	(6.5)	19756	(21.7)	14773	(28.3)
A: Total (1)+(2)+(3)	36354	(31.6)		2421	(10.3)	33934	(37.2)	19602	(37.5)
4. Soil Conservation	44493	(38.7)		13499	(57.0)	30994	(34.0)	16364	(31.3)
5. Afforestation	220	(0.2)		—	—	220	(0.2)	682	(1.3)
B: Total (4)+(5)	44713	(38.9)		13499	(57.0)	31215	(34.2)	17046	(32.6)
6. Metal Breaking	17275	(15.0)		4410	(18.6)	12865	(14.1)	4261	(8.2)
7. Road Construction	16553	(14.4)		3342	(14.1)	13211	(14.5)	11304	(21.7)
C: Total (6)+(7)	33828	(29.4)		7752	(32.7)	26076	(28.6)	15625	(29.9)
Total: A+B+C	114895	(100)		23672	(100)	91225	(100)	52273	(100)

Figures in parentheses give percentage to column totals.

TABLE 6

PLANNED AND ACTUAL EMPLOYMENT PATTERN

Type of Work	[Man months (000)]			
	Whole Year (July 72—June 73)	Period I (July 72—Dec. 72)	Period II (Jan. 73—June 73)	Scarcity Plan (Jan. 73—June 73)
1. Major & Medium Irrigation	66 (2.0)	8 (1.0)	58 (2.7)	29 (2.4)
2. Minor Irrigation	208 (7.0)	8 (1.0)	200 (9.2)	73 (6.1)
3. Well Irrigation, etc.	535 (18.0)	33 (4.1)	502 (23.2)	218 (18.4)
A: Total (1) + (2) + (3)	810 (27.3)	49 (6.1)	761 (35.1)	320 (26.9)
4. Soil Conservation	1315 (44.3)	499 (62.4)	816 (37.7)	286 (24.1)
5. Afforestation	11 (0.0)	—	11 (0.1)	8 (0.7)
B: Total (4) + (5)	1325 (44.7)	499 (62.4)	828 (38.2)	294 (24.7)
6. Metal Breaking	420 (14.2)	140 (17.5)	280 (12.9)	272 (22.8)
7. Road Construction	408 (13.8)	112 (14.0)	296 (13.7)	302 (25.4)
C: Total (6) + (7)	829 (28.0)	252 (31.5)	577 (26.6)	574 (48.3)
Total A + B + C	2966 (100)	800 (100)	2166 (100)	1188 (100)

Figures in parentheses give percentage to column totals.

TABLE 7

CUMULATIVE PHYSICAL ACHIEVEMENT ON SCARCITY WORKS
JANUARY 1971 TO 1973

Category	S.No.	Work Type	Number of Pro- ject Taken Up	Physical Achieve- ment
Category A	1.	1.1 Canals excavated	21	16 Projects comple- ted, 51.30 Km ex- cavated
		1.2 Canals repaired	24	24 Projects completed
	2.	2.1 Irrigation Tanks	59	1 completed
		2.2 Percolation Tanks	158	3 completed
		2.3 Village Ponds	149	93 completed
		2.4 Desilting of Tanks	184	184 completed
	3.	3.1 Community Wells	4313	1105 struck water
		3.2 Tubewells drilled	37	16 Successful & fixed with pumps.
		3.3 Old Wells deep- ened	901	277 Wells struck water
		3.4 Public Wells de- silted	—	—
		3.5 Private Wells desilted	24	24 completed
Category B	4.	4.1 Soil Conserva- tion (Bunding)	1007	286, 450 Hectares co- vered
		4.2 Ayacut develop- ment	69	4912.61 SUD covered
		4.3 Nala Bunding	96	85 completed
	5.	5.1 Afforestation	39	120,000 bunches dug to cover 725 Hectares
Category C	6.	6.1 Metal Breaking	381	929033 cum. metal collected
	7.	7.1 Roads	547	4181 Km. completed
		7.2 Trenches	21	25,706 trenches dug

SOURCE : S. Jambunathan, *Scarcity in Aurangabad District* (mimeographed). Note presented at Scarcity Meeting, Commissioner's Office, Aurangabad on 6th September, 1973. State-
ment B.

conveniently divide the year into two equal halves, before January 1973 when there was no plan and after January 1973 when there was a plan, and compare the situation in Period I with that in Period II.

As even a cursory look at Diagram 2 reveals, significant changes seem to have occurred in Period II. The outlay on high priority projects like well irrigation and minor irrigation increased several fold, the former tending to overtake the outlay on soil conservation. In contrast, the unproductive projects began tapering off, as in the case of road building, or even declining sharply as in the case of metal breaking.

Comparing the two periods in quantitative terms, we find that the share of the top category of productive irrigation works increased from about ten per cent of total outlay to as much as thirty seven per cent, its share of man-hours employed accordingly going up from about six per cent to about thirty-five per cent. Simultaneously, the share of land improving works of category B declined from fifty seven per cent of total outlay to about thirty four per cent, resulting in a corresponding fall in its share of manhours absorbed from about sixty two per cent to thirty eight per cent. The share of unproductive works of category C also declined, though not so dramatically.

It would seem therefore that there was a major shift in the ranking of priorities in the relief employment programme after the Scarcity Plan became operational. It is not being implied that the new pattern of resource allocation under the plan was optimal. In fact, this is not even expected since the plan itself was not an optimal one as we saw earlier. But certainly in spite of its suboptimality, the plan had a sharp impact on the execution of the programme so that its resource allocation pattern was far more rational under the plan than prior to it. It was more rational in the sense that its priorities were much more consistent with the priorities laid out in our programme evaluation criterion, the latter being nothing but an operative expression of objectives which government itself had spelt out for the programme.

4. SOME POLICY IMPLICATIONS

Our foregoing evaluation of the planning and execution of relief programmes, based on a micro-level study in Maharashtra during the drought of 1972-73, throws up several important implications for future relief policy in the country. One need hardly emphasise the immediate relevance and urgency of these issues during the next few months of the current agriculture year in view of the prevailing scarcity situation in various parts of Gujarat, Orissa, West Bengal and some other States.

If our own evidence from last years' drought is any thing to go by, the really difficult months of this year are yet to come. It is only after the end

of the rabi crop, from around the beginning of March, that the mass of the peasantry and landless labourers lose all their sources of survival in a year of drought. So long as the rabi season is on at least large numbers of the rural poor have some source of eking out their measely livelihood. After that there is nothing and the whole burden of survival is thrust upon the relief operations of government. Accordingly our data indicates a sudden sharp rise in the level of operations, the money deployed and the number of persons on relief, from around the beginning of March (see Diagram 2). Rangaswami, underlining the same opinion, quotes an estimate for Gujarat state where the current requirement of about 3 lakh mandays of relief work per day is likely go up to about 10 lakh mandays by March-April.⁹ Thus it is around March that the real crisis will begin and the relief administrators will be put to their severest test. There is just enough time now to take note of our earlier mistakes and face the crisis this time with a little more experience than we had the last time.

The first important policy implication of this paper is that contrary to Rangaswami's implication¹⁰ 'plan works' and 'destitute relief works' can be integrated. In any case we have no choice. Particularly in view of the general crisis now obtaining in the economy and its severe strain on our limited financial resources, it is just not possible to continue funding a development programme and at the same time fund large scale relief employment schemes separately for several months. Thus at the formal level development expenditure might be temporarily curtailed to meet the relief budget. But as Rangaswami herself has pointed out, in reality what is earmarked as relief assistance to the states would get utilised for development projects, leaving the destitutes to fend for themselves. It is by keeping these realities in view that the Sixth Finance Commission has recommended the linking of development funds with relief funds explicitly. It is not false assumptions but the sheer lack of options which has forced the Finance Commission to its stated position.

By dragging out this problem from under the carpet we can at least raise the question that if funds, under whatever head they are sanctioned, are to be deployed for 'plan work', then is it possible at least to ensure that the 'plan works' themselves provide the necessary relief employment? The answer is in the affirmative as we have shown in this paper. By carefully considering different types of projects in terms of a simple but effective criterion, it is possible to find productive developmental projects such as 'well irrigation', minor irrigation and, lower down the scale, soil conservation which are also ideally suited for relief works. These projects can be widely dispersed so as to be conveniently located in the affected areas themselves. Furthermore, contrary to Rangaswami's expectation, the unit cost of employment is not higher

⁹ A. Rangaswami, *op. cit.*

¹⁰ *ibid.*

in these projects than in unproductive ones like metal breaking, so that the numbers employed under the 'plan work' oriented strategy need not be smaller.

A second important policy implication is about the relevance of planning in such relief operations. There has been wide spread scepticism about the relevance, or even the possibility, of planning for a relief operation in a crisis. It so happens that this negative assumption has often led to the unnecessary mismanagement of relief operation. In Maharashtra, to quote Brahme, "scarcity condition and relief works are recognised facts of life. . . . Yet no effort has been made to draw up and keep in readiness adequate number of projects of productive works which could employ the drought affected population meaningfully and help minimise the hardships imposed by failure of rain."¹¹ And this is not only true of Maharashtra. The Sixth Finance Commission has in its recent report identified the lack of adequate planning as a major factor leading to the large scale misutilisation of funds deployed for relief.

The evidence in this paper confirms this position. It shows that the Scarcity Plan, even though hastily prepared and suffering from several defects, had a very sharp impact on the actual execution of the programme and brought the pattern of resource allocation much closer to an optimal pattern than what had obtained prior to the plan.

Finally, the inadequacies of the plan itself point to the need for a more careful and regular process of contingency planning,¹² independent of whether a drought actually occurs or not, as part of the normal process of agricultural development planning. There again it has to be emphasised that the thinking of the Sixth Finance Commission on this question is fully endorsed by last year's experience in Maharashtra.

REFERENCES

1. Annual Plan 1972-73. Govt. of Maharashtra, Finance (Planning) Deptt.
2. Aurangabad Division—Notes on Scarcity Conditions (mimeo). Aurangabad, Sept. 1973.
3. B.M. Bhatia, Famines in India.
4. S. Brahme, Drought in Maharashtra, *Social Scientist* Vol. 1, No. 12, July 1973.
5. B.K. Chougule, Plan of Works to Meet the Scarcity Situation Aurangabad Division (1.1.73 to 30.6.73).
6. District Statistical Information (1951, 1961 & 1969-70). Govt. of Maharashtra, Finance (Planning) Deptt.

¹¹ See S. Brahme, "Drought in Maharashtra", *Social Scientist*, Vol. 1, No. 12, July 1973.

¹² For a discussion of the issues involved here see S. Mundle, "Planning & Resource Deployment in Drought Relief Operations (mimeographed), Indian Institute of Public Administration, 1974.

7. Draft Outline of the Fifth Five Year Plan, Maharashtra State (1974-1979). Govt. of Maharashtra.
 8. Fifth Five Year Plan (1974-75 to 1978-79) Aurangabad District. District Planning Board, Aurangabad District, Maharashtra.
 9. S. Jambunathan, Scarcity in Aurangabad District (mimeograph). 6th September 1973, Aurangabad.
 10. W. Ladejinsky, Drought in Maharashtra, Not in a Hundred Years. *Econ. & Pol. Weekly*, Vol. VIII, No. 7, February 17, 1973.
 11. Material for the Meeting of the Chief Minister with Members of Parliament on 24th August 1973, New Delhi (mimeo). Chief Minister's Secretariat, Bombay.
 12. A. Rangaswami, Financing Famine Relief: Calling the Bluff. *Economic & Pol. Weekly*, Vol. IX, Nos. 45 & 46. Nov. 9, 1974.
 13. Report of the Fact Finding Committee for Survey of Scarcity Areas. Maharashtra State, 1973, Vol. 1.
 14. Report of the Sixth Financial Commission, 1973. Govt. of India, New Delhi, 1973.
 15. Scarcity—A Compendium of Government Orders. Govt. of Maharashtra, 1973.
 16. R.C. Sinha, Scarcity in Aurangabad District (mimeo), Aurangabad, February 1973.
 17. R.C. Sinha, Scarcity in Aurangabad District (mimeo), Aurangabad, May 1973.
 18. H.R. Srivastava, The History of Famines in India.
 19. The Bombay Scarcity Manual (draft), Bombay, 1962.
-